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United States
1079
Circuit Court of Appeals
For the Ninth Circuit.

Transcript of Record.
(IN THREE VOLUMES.)

UNION TOOL COMPANY,

Appellant,

vs.

ELIHU C. WILSON,

Appellee.

VOLUME I.
(Pages 1 to 416, Inclusive.)

Upon Appeal from the United States District Court for
the Southern District of California,
Southern Division.

Filed

JAN 30 1917

F. D. Monckton,
Clerk.

United States
Circuit Court of Appeals
For the Ninth Circuit.

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Appellant,
vs.
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Appellee.

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the Southern District of California,
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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

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Names and Addresses of Attorneys.

For Appellant:

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For Appellee:

RAYMOND I. BLAKESLEE, Esq., California
Building, Los Angeles, California.

*In the District Court of the United States, in and
for the Southern District of California, South-
ern Division.*

No. A-4 and B-62—EQ., CONSOLIDATED.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Bill of Complaint.**FOR INFRINGEMENT OF LETTERS PATENT.**

To the Honorable, the Judges of the District Court of the United States, in and for the Ninth Circuit, Southern District of California, Southern Division:

Elihu C. Wilson, a citizen of the State of California, and resident of Los Angeles, county of Los Angeles, California, brings this Bill of Complaint against Union Tool Company, a corporation organized and existing under and by virtue of the laws of the State of California, and having its principal place of business in the city of Los Angeles, in said State of California, in said Southern District of California, Southern Division thereof; and thereupon, your orator complaining, shows unto your Honors:

I.

That heretofore and prior to the 28th day of November, 1905, your orator, Elihu C. Wilson, was the original, first and sole inventor of a certain new and useful underreamer, not known or used by others, before his invention or discovery thereof, or patented or described in any printed publication in the United States of America or any foreign country, before his invention or discovery thereof, or more than two (2) years prior to his application for letters patent thereon in the United States of America, and not in public use or on sale in the United States of America for more than two (2) years prior to said application for letters patent therefor, and not aban-

doned, and not patented [1*] in any foreign country on an application filed more than twelve (12) months prior to the filing of said application in the United States, and not abandoned.

II.

That your orator, so being the original, sole and first inventor of said underreamer, to wit, on the 28th day of November, 1905, made application in writing in due form of law to the Commissioner of Patents, in accordance with the then existing laws, in such case made and provided, and complied in all respects with the conditions and requirements of said law; that thereafter such proceedings were duly and regularly had and taken in the matter of said application, that, to wit, on the 31st day of July, 1906, letters patent of the United States, No. 827,595, were duly and regularly granted, issued and delivered by the Government of the United States to your orator, according to law, whereby there was granted and secured to your orator, his heirs, legal representatives and assigns, for the full term of seventeen (17) years from and after said 31st day of July, 1906, the sole and exclusive right, liberty and privilege to make, use and vend the said invention throughout the United States of America and the territories thereof; that the said letters patent were duly issued in due form of law under the seal of the United States Patent Office, and duly signed by the acting United States Commissioner of Patents, he having full authority to sign the same, all as will more fully

*Page-number appearing at foot of page of original certified Transcript of Record.

appear from said original letters patent or a duly certified copy thereof, which are ready in court to be produced by your orator; and that prior to the granting and issuance and delivery of said letters patent, all proceedings were had and taken which were required by law to be had and taken prior to issuance of letters patent for new and useful inventions. [2]

III.

That the invention set forth, described and claimed in and by said letters patent No. 827,595, aforesaid, is of great value and has been extensively practiced by your orator; and upon each and every one of said underreamers manufactured, used or sold by your orator, the word "patented" together with the day and date of the issuance of said letters patent, to wit, July 31st, 1906, has been marked or stamped thereon, thereby notifying the public of the said letters patent; and that the said defendant long prior to the commencement of this suit has been notified in writing of the granting and issuance of said letters patent No. 827,595, and of the rights of your orator thereunder, and demand has been made upon said defendant to respect the said letters patent, and not to infringe thereon, but notwithstanding such notice the defendant has continued to make, use, lease and sell underreamers embodying the said invention, as hereinafter more particularly set forth.

IV.

And your orator further shows to your Honors that the trade and public have generally respected and acquiesced in the validity and scope of said let-

ters patent No. 827,595, and in the exclusive rights of your orator, and save and except for the infringement thereof by the defendant, as hereinafter set forth, your orator has had and enjoyed the exclusive right, liberty and privilege, since July 31st, 1906, of manufacturing, using and selling underreamers, embodying and containing the invention described, set forth and claimed in said letters patent No. 827,595, and but for the wrongful and infringing acts of defendant, as hereinafter set forth, your orator would now continue to enjoy the said exclusive rights and the same would be of great and incalculable benefit and advantage to your orator. [3]

V.

And your orator further shows unto your Honors and alleges upon information and belief that notwithstanding the premises, but well knowing the same, and without the license or consent of your orator, and in violation of said letters patent, and of your orator's rights thereunder, the defendadnt herein, Union Tool Company, as aforesaid, has, within the county of Los Angeles and State of California, and within the Southern District of California, Southern Division, aforesaid, within the year last past and prior thereto, and elsewhere, made, used, leased and sold, and is now making, using, leasing and selling underreamers embodying, containing and embracing the invention described, claimed and patented in and by said letters patent No. 827,595, and has infringed upon the exclusive rights secured to your orator by virtue of said letters patent, and continues to and now is infringing thereon, and that

the underreamers so made, used, leased and sold by the defendant were and are infringements upon said letters patent of your orator, and each of said underreamers contains and has contained in it said patented invention; and that although requested so to do, the defendant has refused to cease and desist from the infringement aforesaid, and is now making, using, leasing and selling underreamers containing and embracing the said patented invention, and threatens and intends to continue so to do, and will continue so to do unless restrained by this Court; and is realizing, as your orator is informed and believes, large gains, profits and advantages, the exact amount of which is unknown to your orator; and that by reason of the premises and the unlawful acts of the defendant aforesaid, your orator has suffered and is suffering great and irreparable injury and damage.

VI.

That for all the wrongs herein complained of, your [4] orator has no plain, speedy or adequate remedy at law, and is without remedy, save in a court of equity where matters of this kind are properly cognizable and relievable.

To the end, therefore, that the said defendant may, if it can show why your orator should not have the relief herein prayed, and may, according to the best and utmost of its knowledge, recollection, information and belief, but not under oath, (an answer under oath being hereby expressly waived), full, true and perfect answer make to all and singular the matters and things hereinabove charged, your orator prays

that the defendant may be decreed to account for and pay over to your orator the gains and profits realized by the defendant from and by reason of the infringement aforesaid, together with costs of suit,

And that the defendant may be decreed to account for and pay over unto your orator the damages sustained by your orator by reason of such violation and infringement of your orator's rights, and that the defendant be restrained from any further violation of said rights.

Your orator prays that your Honors may grant a writ of injunction, issuing out of and under the seal of this Honorable Court, perpetually enjoining and restraining said defendant, Union Tool Company, its attorneys, officers, agents, directors, workmen, servants and employees, and each and every of them, from any further construction use, leasing or sale in any manner of said patented invention or any part or embodiment thereof, or the embodiment of any part thereof, in violation of your orator's rights as aforesaid, and that the underreamers now in the possession or use or under the control of said defendant, Union Tool Company, may be destroyed under order of this court; and that your Honors upon rendering the decree above prayed, may assess, or cause to be assessed in addition to the profits to be accounted for as aforesaid, the damages your orator has [5] sustained by reason of such infringement, and that your Honors may increase the actual damages so assessed to a sum equal to three times of the amount of such assessment under the circumstances of the wilful and unjust infringe-

ment by said defendant as herein set forth; and your orator further prays that a provisional or preliminary injunction be issued out of and under the seal of this Honorable Court enjoining and restraining the defendant, Union Tool Company, its officers, directors, agents, servants, employees, workmen and attorneys, and each and every of them, during the pendency of this suit, from any further infringement of said letters patent as aforesaid or otherwise; and that your orator may have such other and further relief as to your Honors may seem proper and meet and in accordance with the equity of the case and with good conscience.

May it please your Honors to grant unto your orator the writ of subpoena issued out of and under the seal of this court directed to the defendant, Union Tool Company, commanding it on a day certain and under a certain penalty fixed by law, to be and appear before this Honorable Court then and there to answer this Bill of Complaint and to stand to and perform and abide by such further orders and decrees as to your orators may seem meet in the premises.

And your orator will ever pray.

ELIHU C. WILSON.

RAYMOND IVES BLAKESLEE,

Solicitor and Counsel for Complainant. 728-29-30
California Bldg., Los Angeles, Cal. [6]

State of California,

City of Los Angeles,

County of Los Angeles,—ss.

On this 14th day of Feb., 1913, before me personally appeared Elihu C. Wilson, who being duly sworn

did depose and say that he is the complainant mentioned in the foregoing Bill of Complaint, that he has read the Bill and knows the contents thereof, and that the same is true of his knowledge and belief, except insofar as matters are therein stated on information and belief, and as to those matters, he verily believes them to be true.

ELIHU C. WILSON.

Subscribed and sworn to before me, this 14th day of February, 1913.

[Seal]

G. ROY PENDELL,

Notary Public in and for County of Los Angeles,
State of California.

My Commission expires 1916.

[Endorsed] : No. A-4—Equity. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson vs. Union Tool Company. In Equity. For Infringement of Letters Patent. Bill of Complaint. Filed Feb. 14, 1913. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. Raymond Ives Blakeslee, Solicitor and Counsel for Complainant, 728-29-30 California Bldg., Los Angeles, Cal. [7]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Answer.

Answering the Bill of Complaint of the complainant:

Defendant denies that at any time prior or subsequent to or on November 28th, 1905, complainant was the original, first or sole inventor of the alleged or any new or useful underreamer; denies that the same was not known or used by others before complainant's alleged or supposed invention or discovery thereof, or that the same had not been patented or described in any printed publication in the United States of America or any foreign country prior to complainant's alleged or supposed invention or discovery thereof or more than two years prior to complainant's alleged application for letters patent thereon in the United States of America; denies that the same had not been in public use or on sale in the United States of America for more than two years prior to complainant's alleged application for letters patent therefor; defendant does not know and is not informed save by said Bill of Complaint as to whether complainant on November 28, 1905, or on or at any date or time, made application in due form of law or otherwise or at all, in accordance with the then existing laws, or otherwise or at all, for letters patent of the United States upon or for said alleged or pretended invention and therefore denies the same and prays that complainant be required to [8] make strict proof thereof; admits that on July 31, 1906, pretended letters patent numbered 827,595 were attempted to be granted or issued to complain-

ant, but specifically alleges that said pretended letters patent were and are wholly void and of no effect; denies that such pretended letters patent were issued or granted according to or in due form of law or that thereby the alleged or any rights were granted or secured to complainant; denies that the pretended invention alleged to be set forth, described or claimed in or by said pretended letters patent is of great or any value whatever or that the complainant has upon each and every underreamer manufactured, used or sold by complainant, marked thereon the word "patented" together with the day and date of said pretended letters patent; admits that on or about February 3, 1913, defendant received a notice that complainant claimed this defendant was infringing upon said pretended letters patent but denies that defendant ever had any notice of any such claim prior thereto; denies that the trade or public have generally or at all respected or acquiesced in the validity or scope of said pretended letters patent or in the alleged and pretended exclusive rights of complainant therein or thereunder; denies that the said alleged exclusive rights are, or except for the act or acts of this defendant would be, of great or incalculable or any value whatever to complainant.

Defendant denies that at any time whatever, either in the Southern District of California or elsewhere, it has ever made or used or leased or sold any underreamer or underreamers containing or embracing said alleged or pretended invention so alleged to be set forth, described, claimed or patented in or by said pretended letters patent No. 827,595, or has in any

manner whatsoever infringed upon the alleged exclusive rights or right of complainant by virtue of said pretended letters patent [9] or that defendant has ever threatened or proposed or intended so to do; denies that defendant has ever realized any gain, profit or advantage whatever from the use in any manner whatsoever of said pretended invention or that by reason of any act or deed of defendant in the premises, complainant has suffered or is suffering or will suffer great, irreparable or any injury whatsoever.

Defendant alleges that said letters patent No. 827,595 are void for the reason that the said Wilson unjustly obtained the same for what was in fact previously invented by another, to wit, Alexander Cummings, formerly residing in the city of Los Angeles, California, and now a resident of Baldwin Park, California, who was using reasonable diligence in adapting and perfecting the same.

Defendant further alleges that the alleged and pretended invention in underreamers pretended to be patented in or by said patent No. 827,595, or things in all material and substantial respects the same as said alleged invention, had prior to the alleged invention thereof by complainant and more than two years prior to the alleged application of said complainant for said pretended letters patent, been patented and described in printed publications in the United States, and particularly in the following letters patent of the United States:

Number.	Date.	Inventor.	Invention.
734,833,	July 28, 1903,	Edward Double,	Under-reamers.
687,296,	Nov. 26, 1901,	Jacob S. Brown,	“ “
674,793,	May 21, 1901,	Edward North,	“ “
679,384,	July 30, 1901,	James M. Kellerman,	“ “
762,435,	June 14, 1904,	Thomas A. O'Donnell, & Arthur G. Willard.	“ “
683,352,	Sept. 24, 1901,	John C. Swan,	“ “
496,317,	Apr. 25, 1893,	Patrick H. Mack,	“ “

[10]

717,469,	Dec. 30, 1902,	John C. Swan,	“ “
748,054,	Dec. 29, 1903,	Edward Double,	“ “
796,197,	Aug. 1, 1905,	“ “	“ “
403,877,	May 21, 1889,	Jeremiah E. Day,	“ “
668,340,	Feb. 19, 1901,	William Plotts,	“ “
819,042,	May 1, 1906,	Alexander Cummings,	“ “
704,136,	July 8, 1902,	J. P. Smith,	“ “

and had been so described and set forth in the following printed publications, to wit:

A catalogue printed and published at the city of Petrolia, in the Province of Ontario, Dominion of Canada, during the year 1901, by the Oil Well Supply Company, Limited, of Petrolia, Canada.

A catalogue printed and published at the city of Petrolia, in the Province of Ontario, Dominion of Canada, during the year 1903, by the Oil Well Supply Company, Limited, of Petrolia, Canada.

Defendant further alleges that the alleged improvement purporting to be patented by said pretended letters patent No. 827,595, or things in all substantial and material respects the same as said alleged improvement, or material or substantial parts thereof, and prior to the alleged or any invention or discovery thereof by complainant, had been known

to and used by others in the United States of America, and particularly by the following, to wit:

Union Oil Tool Company, a corporation organized under the laws of the State of California, and having a factory and shop at Santa Paula, Ventura County, California, and Los Angeles, California, and the officers and workmen of said corporation, all of whom had such knowledge and did use the same, both at said Santa Paula, California, and Los Angeles, California; [11]

Edward Double, residing in the city of Los Angeles, California, who had such knowledge and use, both at Santa Paula, California, and Los Angeles, California;

Thomas A. O'Donnell and Arthur G. Willard, both of Los Angeles, California, who had such knowledge and use in the city of Los Angeles, California, and in the county of Los Angeles, California;

Leidecker Tool Company, a corporation of Marietta, Ohio, who had such knowledge and use at Marietta, Ohio.

For a counterclaim against said complainant, defendant alleges:

That heretofore and prior to the 26th day of October, 1901, one Edward Double, then of Santa Paula, in the State of California, was the original, first and sole inventor of a certain new and useful under-reamer, not known or used by others before his invention or discovery thereof, or patented or described in any printed publication in the United States of America, or any foreign country, before his invention or discovery thereof, or more than two years

prior to his application for letters patent thereon in the United States of America, or in public use or on sale in the United States of America for more than two years prior to such application for letters patent therefor, and not abandoned.

That said Edward Double, so being the first and sole inventor of the said underreamer, heretofore, to wit, on the 26th day of October, 1901, made due application in writing, in due form of law, to the Commissioner of Patents of the United States of America, in accordance with the then existing laws of the United States of America in such case made and provided, and complied in all respects with the conditions and requirements of said laws. [12]

That all the requirements of law and of the rules of the United States Patent Office, in such case made and provided, having been fully complied with, and upon due proceedings had in said Patent Office of the United States, in full accordance with the then existing laws and rules of the United States Patent Office, relating to the grant and issuance of letters patent for inventions, and after due examination made by the Commissioner of Patents as to the novelty and patentability of the said invention, as required by law, and the aforesaid invention or underreamer having been found by the Commissioner of Patents to be new, novel, useful and patentable under said laws and the rules of the United States Patent Office, on the 28th day of July, 1903, letters patent of the United States of America numbered 734,833, signed, sealed and executed in due form of law, and bearing date the day and year aforesaid, were

granted, issued and delivered by the Commissioner of Patents of the United States of America, to the said Edward Double, whereby there was granted and secured to the said Edward Double, his heirs, legal representatives and assigns, for the term of seventeen years from and after the said 28th day of July, 1903, the exclusive right and liberty of making, using and vending to others to be used, the said underreamer throughout the United States and the Territories thereof, as by said original letters patent or a duly certified copy thereof, to be here in court produced as may be required, will more fully and at large appear :

Defendant alleges that defendant is now and for many years has been the exclusive licensee under said letters patent No. 734,833, and that by direct and mesne instruments in writing, the said Edward Double, his grantees and assigns, did grant to defendant the exclusive right, liberty and privilege of manufacturing underreamers embodying and containing said invention [13] set forth, described and claimed in and by said letters patent No. 734,833, and that said exclusive license is still in full force and effect.

That the said underreamer set forth, described and claimed in said letters patent No. 734,833, has gone into great and general use and has displaced all other underreamers or tools for said use from the market and become the underreamers in general use in underreaming wells, and that the exclusive rights of defendant in and under said letters patent No. 734,833 have been generally respected and acknowledged by

the trade and by users of such tools, and the validity of the said letters patent, and the title of defendant thereto, have been generally acknowledged and acquiesced in by all manufacturers, the trade and users of the said tool, and save for the infringement thereof by the complainant herein named, defendant has had and would now enjoy and possess the exclusive right and liberty of making, using and vending the said underreamers, and but for the wrongful and unlawful acts of the complainant herein named, defendant would now be in the possession and enjoyment of the exclusive right and liberty of so making, using and vending to others to be used the said invention and underreamer; and defendant further shows unto your Honors that the exclusive right and liberty of making, and using and vending the said patented invention is of great value and advantage to this defendant, and defendant has been, and but for the wrongful and unlawful acts of the complainant herein named, would be receiving great advantages, benefits and profits therefrom.

Defendant further shows unto your Honors that all underreamers manufactured, sold or used by defendant or defendant's grantors, since the day of the date of the grant, issuance and delivery of the said letters patent, have been plainly marked by [14] defendant with the word "patented," together with the day and date of the grant and issuance of said letters patent; and defendant further shows unto your Honors that the said complainant has had full, complete and personal knowledge of, and has been notified in writing, prior to the filing of

the Bill of Complaint herein, of defendant's rights under said letters patent, and has been notified in writing that the acts of said complainant herein referred to, in making, using and vending to others to be used underreamers embodying and containing said invention set forth and claimed in said letters patent, are in violation and infringement of the exclusive rights of defendant under said letters patent, and complainant has been requested to refrain and desist therefrom but has refused so to do, but has continued to manufacture, use and sell underreamers embodying and containing said invention set forth and claimed in said letters patent after full knowledge of the rights of defendant under said letters patent.

Defendant further shows unto your Honors that since the grant, issuance and delivery of said letters patent to defendant and defendant's grantors and assignors, as set forth, the complainant well knowing the facts hereinbefore set forth and having full notice of the rights of defendant in the premises and against the will of defendant, without the license or authority of defendant or of any of defendant's grantors, and in violation of said exclusive rights and liberties granted and secured to defendant by the said letters patent, has been and is now within the Southern District of California aforesaid, constructing and using and selling and causing to be constructed and sold and used, underreamers containing and embodying the invention set forth, described, and claimed in the letters patent No. 734,833, and intends and threatens to continue so to do, but as to how many or to what extent exactly, defendant does

not [15] know and has not been informed, but prays discovery thereof; that by reason of said violation and infringement of the exclusive rights of defendant under the said letters patent by the said complainant, defendant has been and is being deprived of large profits and advantages which might and otherwise would accrue to the benefit of defendant, and the said wrongful infringing acts of the complainant have been and are now causing defendant great and irreparable damage; and defendant shows unto your Honors that it has suffered damage thereby in the full sum of one hundred fifty thousand dollars (\$150,000) as near as defendant can now estimate the same.

Defendant prays that complainant may be decreed to account for and pay over unto defendant, the profits thus unlawfully derived from the violation of defendant's rights, and the damages sustained by defendant by reason of such violation and infringement of defendant's rights, and be restrained from any further violation of said rights. Defendant prays that your Honors may grant a writ of injunction, issuing out of and under the seal of this Honorable Court, perpetually enjoining and restraining the said complainant, Elihu C. Wilson, his agents, servants, associates, confederates, attorneys and workmen, and each and every of them, from any further construction, sale or use in any manner, of said patented invention, or any part thereof, in violation of defendant's rights as aforesaid; and that the underreamers now in possession, control or use of the said complainant may be destroyed under order of this court;

and that your Honors upon the rendering of the decree above prayed, may assess, or cause to be assessed, in addition to the profits to be accounted for as aforesaid, the damages defendant has sustained by reason of such infringement, and that your Honors may increase the actual damages so assessed to a sum equal to three times the amount of such assessment under the [16] circumstances of the wilful and unjust infringement by said complainant as herein set forth; and defendant further prays that a provisional or preliminary injunction be issued out of and under the seal of this Honorable Court, enjoining and restraining the complainant, his agents, servants, associates, confederates, attorneys and workmen, and each and every of them, during the pendency of this suit, from any further infringement of said letters patent, and for such other and further relief as the equity of the case may require and to your Honors may seem meet.

UNION TOOL COMPANY.

By FREDERICK S. LYON,

Its Solicitor.

FREDERICK S. LYON,

Solicitor and of Counsel for Defendant.

[Endorsed]: No. A-4—Equity. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity. Answer. Due service and receipt of a copy of the within Answer is hereby admitted this 5th day of April, 1913. Raymond Ives Blakeslee, Solicitors for Complainant. Filed Apr. 5, 1913. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. Fred-

erick S. Lyon, 504-7 Merchants Trust Building, Los Angeles, Cal., Solicitor for Defendant. [17]

In the United States District Court, Southern District of California, Southern Division.

IN EQUITY.

A-4—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Notice of Motion to Strike Out Counterclaim of Defendant.

FOR INFRINGEMENT OF LETTERS PATENT.

To Frederick S. Lyon, Esq., Solicitor and of Counsel for Defendant:

You will please take notice that I will present to his Honor, Olin Wellborn, Judge of the District Court of the United States for the Southern District of California, Southern Division, on the 19th day of May, 1913, or as soon thereafter as practicable, a Motion, a copy of which is hereto attached, praying that the counterclaim, set up and included by the defendant in its Answer interposed to the Bill of Complaint, filed in the above-entitled cause, be stricken out for insufficiency, and upon the grounds in said Motion stated.

RAYMOND IVES BLAKESLEE,

Solicitor and Counsel for Complainant.

Dated May 13, 1913.

[Endorsed]: In the United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity. For infringement of Letters Patent. A-4—Equity. Notice of Motion to Strike Out Counterclaim. Service of a copy of the within Notice acknowledged this 13th day of May, 1913. Frederick S. Lyon, Solicitor and of Counsel for Defendant. Raymond Ives Blakeslee, Solicitor and of Counsel for Complainant, 728-29-30 California Bldg., 2d St. and S. Broadway, Los Angeles, California. [18]

In the United States District Court, Southern District of California, Southern Division.

IN EQUITY.

A-4—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

**Motion to Strike Out Counterclaim Set Up in Answer
of Defendant.**

FOR INFRINGEMENT OF LETTERS
PATENT.

To the Honorable the Judges of the District Court of
the United States in and for the Southern Dis-
trict of California, Southern Division.

Comes now the complainant herein and moves the

Court to strike out the counterclaim set up by the defendant in the Answer by it interposed to the Bill of Complaint, as insufficient on the following grounds:

1. That said counterclaim fails to show, and the defendant fails to allege, and it does not appear in any respect from said counterclaim, that the defendant is the owner of the right, title and interest, or any part thereof, in, to and under the letters patent in said counterclaim alleged to be infringed by complainant.

2. That it does not appear from said counterclaim, nor is it alleged by defendant, who is the owner or who are the owners of the right, title and interest in, to and under said letters patent alleged in and by said counterclaim to be infringed by the complainant.

3. That it is not shown in and by said counterclaim, nor is it alleged by said defendant, in what manner and at what time said defendant obtained or acquired or was granted any right, liberty and privilege, whatsoever, exclusive or otherwise, of manufacturing underreamers embodying and containing the [19] invention set forth, described and claimed in and by the letters patent alleged in and by said counterclaim to be infringed by the complainant.

4. That said counterclaim fails to specify and allege in what respects and with respect to what claims and portions thereof, the complainant herein is infringing or has infringed said letters patent alleged in said counterclaim to be infringed by the complainant.

5. That said counterclaim fails to specify and allege at what place the complainant has infringed or is infringing the letters patent alleged in and by said counterclaim to be infringed by the complainant.

6. That said counterclaim does not state and set forth facts sufficient to constitute a valid counterclaim or cause of action in equity against complainant.

And this complainant prays for an order providing that pending the hearing and determination of this Motion, and procedure pursuant to such determination, all other proceedings in this suit may be stayed.

Dated May 13, 1913.

ELIHU C. WILSON.

By RAYMOND IVES BLAKESLEE,

His Solicitor.

RAYMOND IVES BLAKESLEE,

Solicitor and Counsel for Complainant.

[Endorsed]: A-4—Equity. In the United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity. For Infringement of Letters Patent. Motion to Strike Out Counterclaim. Service of a copy of the within Motion acknowledged this 13th day of May, 1913. Frederick S. Lyon, Solicitor and of Counsel for Defendant. Filed May 13, 1913. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. Raymond Ives Blakeslee, Solicitor and of Counsel for Complainant, 728-29-30 California Bldg., 2d St. and S. Broadway, Los Angeles, California. [20]

At a stated term, to wit, the July term, A. D. 1913, of the District Court of the United States of America, in and for the Southern District of California, Southern Division, held at the courtroom thereof, in the city of Los Angeles, on Monday, the fourteenth day of July, in the year of our Lord, one thousand nine hundred and thirteen: PRESENT: The Honorable OLIN WELLBORN, District Judge.

No. A-4—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Order That Counterclaim Set Up in Answer of Defendant be Stricken Without Prejudice.

This cause coming on by consent to be heard on complainant's motion to strike out the counterclaim set up and included in defendant's answer to the bill of complaint herein, and also coming on regularly on this day to be set down for hearing and argument; Raymond Ives Blakeslee, Esq., appearing as counsel for complainant, and Frederick S. Lyon, Esq., appearing as counsel for defendant; now, on motion of Raymond Ives Blakeslee, Esq., of counsel for complainant, and with the consent of Frederick S. Lyon, Esq., of counsel for defendant, it is ordered that the counterclaim set up and included by the

defendant in its answer interposed to the bill of complaint filed in the above-entitled cause be stricken from said answer without prejudice, and it is further ordered that said cause be, and the same hereby is continued for the term for said hearing and argument thereof.

[Endorsed]: No. A-4—Eq. United States District Court, Southern District of California. Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Copy of Order Striking Out Counterclaim Set Up and Included in Answer Interposed to Complaint. Filed Sep. 13, 1916. Wm. M. Van Dyke, Clerk. By T. F. Green, Deputy Clerk. [21]

In the United States District Court, Southern District of California, Southern Division.

IN EQUITY.

No. A-4—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

**Motion for Order Consolidating Causes and Notice
Thereof.**

Please take notice that on Monday, January 11, 1915, at the hour of 10:30 o'clock A. M., or as soon thereafter as counsel can be heard, at the courtroom

of Honorable Judge Bledsoe, in the Federal Building, Los Angeles, California, I shall move this Honorable Court for an order consolidating with this cause of action the cause of action set forth in the Bill of Complaint subsequently filed in this court between the same parties and entitled Wilson versus Union Tool Company, In Equity, No. B-62, and alleging further infringement of the same patent sued on herein. This motion will be based upon the proceedings in this case and including the record and files thereof and proofs taken on behalf of complainant therein, together with the Bill of Complaint filed in said subsequent suit.

Dated December 31, 1914.

RAYMOND IVES BLAKESLEE,

Solicitor for Complainant, [22]

To FREDERICK S. LYON, Esq.,

Solicitor for Defendant.

Merchants Trust Building, Los Angeles, California.

[Endorsed]: In Equity. No. A-4—Equity. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Motion and Notice Thereof. Received a copy of the within Motion and Notice thereof this 31st day of December, 1914. Frederick S. Lyon, Solicitor for Defendant. Filed Jan. 2, 1915. Wm. M. Van Dyke, Clerk. By Chas N. Williams, Deputy Clerk. Raymond Ives Blakeslee, 728-30 California Building, Los Angeles, Cal., Solicitor for Complainant. [23]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Second Bill of Complaint.

For Infringement of Letters Patent.

To the Honorable, the Judges of the District Court
of the United States, in and for the Ninth Cir-
cuit, Southern District of California, Southern
Division:

Elihu C. Wilson, a citizen of the State of Cali-
fornia, and resident of Los Angeles, county of Los
Angeles, California, brings this Bill of Complaint
against Union Tool Company, a corporation organ-
ized and existing under and by virtue of the laws of
the State of California, and having its principal
place of business in the city of Los Angeles, in said
State of California, in said Southern District of Cali-
fornia, Southern Division thereof; and thereupon,
your orator complaining, shows unto your Honors:

I

That heretofore and prior to the 28th day of
November, 1905, your orator, Elihu C. Wilson, was
the original, first and sole inventor of a certain new
and useful underreamer, not known or used by
others, before his invention or discovery thereof, or

patented or described in any printed publication in the United States of America or any foreign country, before his invention or discovery thereof, or more than two (2) years prior to his application for letters patent thereon in the United States of America, and not in public use or on sale in the United States of America for more than two (2) years prior to said application for letters patent therefor, and not abandoned, and not patented [24] in any foreign country on an application filed more than twelve (12) months prior to the filing of said application in the United States, and not abandoned.

II.

That your orator, so being the original, sole and first inventor of said underreamer, to wit, on the 28th day of November, 1905, made application in writing in due form of law to the Commissioner of Patents, in accordance with the then existing laws, in such case made and provided, and complied in all respects with the conditions and requirements of said law; that thereafter such proceedings were duly and regularly had and taken in the matter of said application, that, to wit, on the 31st day of July, 1906, letters patent of the United States, No. 827,595, were duly and regularly granted, issued, and delivered by the Government of the United States to your orator, according to law, whereby there was granted and secured to your orator, his heirs, legal representatives and assign, for the full term of seventeen (17) years from and after said 31st day of July, 1906, the sole and exclusive right, liberty and privilege to make, use and vend the said invention throughout the

United States of America and the territories thereof; that the said letters patent were duly issued in due form of law under the seal of the United States Patent Office, and duly signed by the acting United States Commissioner of Patents, he having full authority to sign the same, all as will more fully appear from said original letters patent or a duly certified copy thereof, which are ready in court to be produced by your orator; and that prior to the granting and issuance and delivery of said letters patent, all proceedings were had and taken which were required by law to be had and taken prior to issuance of letters patent for new and useful inventions. [25]

III.

That the invention set forth, described and claimed in and by said letters patent No. 827,595, aforesaid, is of great value and has been extensively practised by your orator; and upon each and every one of said underreamers manufactured, used or sold by your orator, the word "patented" together with the day and date of the issuance of said letters patent, to wit, July 31st, 1906, has been marked or stamped thereon, thereby notifying the public of the said letters patent; and that the said defendant long prior to the commencement of this suit has been notified in writing of the granting and issuance of said letters patent No. 827,595, and of the rights of your orator thereunder, and demand has been made upon said defendant to respect the said letters patent, and not to infringe thereon, but notwithstanding such notice the defendant has continued to make, use, lease and

sell underreamers embodying the said invention, as hereinafter more particularly set forth.

IV.

And your orator further shows to your Honors that the trade and public have generally respected and acquiesced in the validity and scope of said letters patent No. 827,595, and in the exclusive rights of your orator, and save and except for the infringement thereof by the defendant, as hereinafter set forth, and otherwise by defendant, your orator has had and enjoyed the exclusive right, liberty and privilege, since July 31st, 1906, of manufacturing, using and selling underreamers, embodying and containing the invention described, set forth and claimed in said letters patent No. 827,595, and but for the wrongful and infringing acts of defendant, as hereinafter set forth, your orator would now continue to enjoy the said exclusive rights and the same would be of great and incalculable benefit and advantage to your orator. [26]

V.

And your orator further shows unto your Honors and alleges upon information and belief that notwithstanding the premises, but well knowing the same, and without the license or consent of your orator, and in violation of said letters patent, and of your orator's rights thereunder, the defendant herein, Union Tool Company, as aforesaid, has, within the county of Los Angeles, and State of California, and within the Southern District of California, Southern Division, aforesaid, within the year last past and prior thereto, and elsewhere, made, used,

leased and sold, and is now making, using, leasing and selling underreamers embodying, containing and embracing the invention described, claimed and patented in and by said letters patent No. 827,595, and particularly set forth and defined by claims 2, 4, 8, 9, 10, 11, 12, 13, 14, 15 and 19 thereof, and has infringed upon the exclusive rights secured to your orator by virtue of said letters patent, and continues to and now is infringing thereon, and that the Underreamers so made, used, leased and sold by the defendant were and are infringements upon said letters patent of your orator, and each of said underreamers contains and has contained in it said patented invention; and that although requested so to do, the defendant has refused to cease and desist from the infringement aforesaid, and is now making, using, leasing and selling underreamers containing and embracing the said patented invention, and threatens and intends to continue so to do, and will continue so to do unless restrained by this Court; and is realizing, as your orator is informed and believes, large gains, profits and advantages, the exact amount of which is unknown to your orator; and that by reason of the premises and the unlawful acts of the defendant aforesaid, your orator has suffered and is suffering great and irreparable injury and damage. [27]

VI.

That for all the wrongs herein complained of, your orator has no plain, speedy or adequate remedy at law, and is without remedy, save in a court of equity where matters of this kind are properly cognizable and relievable.

To the end, therefore, that the said defendants may, if it can show why your orator should not have the relief herein prayed, and may, according to the best and utmost of its knowledge, recollection, information and belief, but not under oath, (an answer under oath being hereby expressly waived), full, true and perfect answer make to all and singular the matters and things hereinabove charged, your orator prays that the defendant may be decreed to account for and pay over to your orator the gains and profits realized by the defendant from and by reason of the infringement aforesaid, together with costs of suit;

And that the defendant may be decreed to account for and pay over unto your orator the damages sustained by your orator by reason of such violation and infringement of your orator's rights, and that the defendant be restrained from any further violation of said rights;

Your orator prays that your Honors may grant a writ of injunction, issuing out of and under the seal of this Honorable Court, perpetually enjoining and restraining said defendant, Union Tool Company, its attorneys, officers, agents, directors, workmen, servants and employees and each and every of them from any further construction, use, leasing or sale in any manner of said patented invention or any part or embodiment thereof, or the embodiment of any part thereof, in violation of your orator's rights as aforesaid, and that the underreamers now in the possession or use or under the control of said defendant, Union Tool Company, may be destroyed under order of this court; and that your Honors upon rendering

the decree above prayed, may assess, or cause to be assessed in addition to the profits to be [28] accounted for as aforesaid, the damages your orator has sustained by reason of such infringement, and that your Honors may increase the actual damages so assessed to a sum equal to three times of the amount of such assessment under the circumstances of the wilful and unjust infringement by said defendant herein set forth; and your orator further prays that a provisional or preliminary injunction be issued out of and under the Seal of this Honorable Court enjoining and restraining the defendant, Union Tool Company, its officers, directors, agents, servants, employees, workmen and attorneys, and each and every of them, during the pendency of this suit, from any further infringement of said letters patent as aforesaid or otherwise; and that your orator may have such other and further relief as to your Honors may seem proper and meet and in accordance with the equity of the case and with good conscience.

May it please your Honors to grant unto your orator the writ of subpoena issued out of and under the seal of this court directed to the defendant, Union Tool Company, commanding it on a day certain and under a certain penalty fixed by law, to be and appear before this Honorable Court then and there to answer this Bill of Complaint and to stand to and perform and abide by such further orders and decrees as to your Honors may seem meet in the premises.

And your orator will ever pray.

ELIHU C. WILSON.

RAYMOND IVES BLAKESLEE,

Solicitor and Counsel for Complainant.

728-29-30 California Bldg.,

Los Angeles, Cal. [29]

State of California,

City of Los Angeles,

County of Los Angeles,—ss.

On this 23rd day of December, 1914, before me personally appeared Elihu C. Wilson, who being duly sworn did depose and say that he is the complainant mentioned in the foregoing Bill of Complaint; that he has read the Bill and knows the contents thereof, and that the same is true to his knowledge and belief, except in so far as matters are therein stated on information and belief, and as to those matters, he verily believes them to be true.

ELIHU C. WILSON.

Subscribed and sworn to before me, this 23d day of December, 1914.

[Seal]

FRANCIS L. ISGRIGG,

Notary Public in and for the County of Los Angeles,
State of California.

My Commission expires Jan. 30, 1917.

[Endorsed]: In Equity. No. B-62—Equity. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Bill of Complaint. Filed Dec. 28, 1914. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk.

Raymond Ives Blakeslee, 728-30 California Building,
Los Angeles, Cal., Solicitor for Complainant. [30]

*In the United States District Court, Southern Dis-
trict of California, Southern Division.*

IN EQUITY—No. B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Motion to Consolidate.

Now comes the complainant by his solicitor and moves the Court for an order consolidating the cause of action herein with that set forth in suit No. A-4—In Equity, between Elihu C. Wilson, Complainant, and Union Tool Company, Defendant, respectively the complainant and defendant herein, the Bill of Complaint herein being in the nature of a supplemental Bill; and this motion being complementary to a similar motion heretofore presented to this Court in said equity suit No. A-4 and undetermined. This motion will be based upon the records and files in this case and upon the proceedings taken in said equity suit No. A-4 and including the records and files thereof and proofs taken on behalf of complainant therein.

RAYMOND IVES BLAKESLEE,
Solicitor and Counsel for Complainant.

[Endorsed]: In Equity—No. B-62 United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Motion to Consolidate. Received a copy of the within Motion to Consolidate this 9th day of January, 1915. Frederick S. Lyon, Solicitor for Defendant. Filed Jan. 9, 1915. Wm. M. Van Dyke, Clerk. By R. S. Zimmerman, Deputy Clerk. Raymond Ives Blakeslee, 728-30 California Building, Los Angeles, Cal., Solicitor for Complainant. [31]

In the United States District Court, Southern District of California, Southern Division.

IN EQUITY—No. B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Motion for Leave to Amend Bill of Complaint and to Consolidate.

Please take notice that on Monday, February 8th, 1915, at the hour of ten (10) o'clock A. M., or as soon thereafter as counsel can be heard, I shall present a motion before this Court, in the courtroom thereof in the Federal Building, Los Angeles, California, for leave to file the annexed Amended Bill of Complaint herein; and for a further order, consolidating the Cause of Action herein with that set

forth in suit No. A-4 In Equity, between Elihu C. Wilson, Complainant and the Union Tool Company, Defendant, respectively the complainant and defendant herein, the said Bill of Complaint and the Amended Bill of Complaint herein being in the nature of a Supplemental Bill, and this Motion being as to consolidation complementary to the similar motion heretofore noticed to be presented to this Court in said equity suit No. A-4.

This Motion will be based upon the records and files in this case and upon the proceedings taken in said equity suit No. A-4 and including the records and files thereof and proofs taken on behalf of complainant therein.

RAYMOND IVES BLAKESLEE,
Solicitor and Counsel for Complainant.
To FREDERICK S. LYON, Esq.,
Merchants Trust Building,
Los Angeles, California,
Solicitor for Defendant. [32]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY—No. B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Amended Bill of Complaint.**FOR INFRINGEMENT OF LETTERS
PATENT.**

To the Honorable, the Judges of the District Court of the United States, in and for the Ninth Circuit, Southern District of California, Southern Division:

Elihu C. Wilson, a citizen of the State of California, and resident of Los Angeles, County of Los Angeles, California, brings this Bill of Complaint against the Union Tool Company, a corporation organized and existing under and by virtue of the laws of the State of California, and having its principal place of business in the City of Los Angeles, in said State of California, in said Southern District of California, Southern Division thereof; and thereupon, your orator complaining, shows unto your Honors:

I.

That heretofore and prior to the 28th day of November, 1905, your orator, Elihu C. Wilson, was the original, first and sole inventor of a certain new and useful underreamer, not known or used by others, before his invention or discovery thereof, or patented or described in any printed publication in the United States of America or any foreign country, before his invention or discovery thereof, or more than two (2) years prior to his application for letters patent thereon in the United States of America, and not in public use or on sale in the United States of [33] America for more than two (2) years

prior to said application for letters patent therefor, and not abandoned, and not patented in any foreign country on an application filed more than twelve (12) months prior to the filing of said application in the United States, and not abandoned.

II.

That your orator, so being the original, sole and first inventor of said underreamer, to wit, on the 28th day of November, 1905, made application in writing in due form of law to the Commissioner of Patents, in accordance with the then existing laws, in such case made and provided, and complied in all respects with the conditions and requirements of said law; that thereafter such proceedings were duly and regularly had and taken in the matter of such application, that, to wit, on the 31st day of July, 1906, letters patent of the United States, No. 827,595, were duly and regularly granted, issued, and delivered by the Government of the United States to your orator, according to law, whereby there was granted and secured to your orator, his heirs, legal representatives and assign, for the full term of seventeen (17) years from and after said 31st day of July, 1906, the sole and exclusive right, liberty and privilege to make, use and vend the said invention throughout the United States of America and the territories thereof; that the said letters patent were duly issued in due form of law under the seal of the United States Patent Office, and duly signed by the acting United States Commissioner of Patents, he having full authority to sign the same, all as will more fully appear from said original

letters patent, or a duly certified copy thereof, which are ready in court to be produced by your orator; and that prior to the granting and issuance and delivery of said letters patent, all proceedings were had and taken which were required by law to be had and taken prior to the issuance of letters patent for new and useful inventions. [34]

III.

That the invention set forth, described and claimed in and by said letters patent No. 827,595, aforesaid, is of great value and has been extensively practiced by your orator; and upon each and every one of said underreamers manufactured, used or sold by your orator, the word "patented" together with the day and date of the issuance of said letters patent, to wit, July 31st, 1906, has been marked or stamped thereon, thereby notifying the public of the said letters patent; and that the said defendant, long prior to the commencement of this suit has been notified in writing of the granting and issuance of said letters patent No. 827,595, and of the rights of your orator thereunder, and demand has been made upon such defendant to respect the said letters patent, and not to infringe thereon, but notwithstanding such notice the defendant has continued to make, use, lease and sell underreamers embodying the said invention, as hereinafter more particularly set forth.

IV.

And your orator further shows to your Honors that the trade and public have generally respected and acquiesced in the validity and scope of said letters patent No. 827,595, and in the exclusive rights

of your orator, and save and except for the infringement thereof by the defendant, as hereinafter set forth, and otherwise by defendant, your orator has had and enjoyed the exclusive right, liberty and privilege, since July 31st, 1906, of manufacturing, using and selling underreamers, embodying and containing the invention described, set forth and claimed in said letters patent No. 827,595, and but for the wrongful and infringing acts of defendant, as hereinafter set forth, your orator would now continue to enjoy the said exclusive rights and the same would be of great and incalculable benefit and advantage to your orator. [35]

V.

And your orator further shows unto your Honors that there is pending between the parties to this suit in equity in the same court, another suit in equity entitled Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant, No. A-4, in which infringement by the defendant herein is charged with respect to the letters patent sued under herein; that certain proofs have been taken on behalf of complainant in said other suit and an election has been made to stand upon claims sixteen and seventeen of said patent in suit; that since the commencement of taking proofs in said other suit, defendant herein, and in said other suit, has been found to have departed from its original procedure in the manufacture and sale of underreamers, and to have further and more elaborately infringed the letters patent sued under therein and herein, thereby as your orator alleges upon information and belief, infringing, or further

infringing, claims 2, 4, 8, 9, 10, 11, 12, 13, 14, 15, and 19 of the said patent therein and herein sued under, all as hereinafter more particularly alleged.

VI.

And your orator further shows unto your Honors and alleges upon information and belief that notwithstanding the premises, but well knowing the same, and without the license or consent of your orator, and in violation of said letters patent, and of your orator's rights thereunder, the defendant herein, Union Tool Company, as aforesaid, has, within the Southern District of California, Southern Division, aforesaid, within the year last past and prior thereto, and elsewhere, made, used, leased and sold, and is now making, using, leasing and selling underreamers embodying, containing and embracing the invention described, claimed and patented in and by said letters patent No. 827,595, and particularly as set forth and defined by claims [36] 2, 4, 8, 9, 10, 11, 12, 13, 14, 15 and 19 thereof, and has infringed upon the exclusive rights secured to your orator by virtue of said letters patent, and continues to and now is infringing thereon, and that the underreamers so made, used, leased and sold by the defendant were and are infringements upon said letters patent of your orator, and each of said underreamers contains and has contained in it said patented invention; and that although requested so to do, the defendant has refused to cease and desist from the infringement aforesaid, and is now making, using, leasing and selling underreamers containing and embracing the said patented invention, and

of your orator, and save and except for the infringement thereof by the defendant, as hereinafter set forth, and otherwise by defendant, your orator has had and enjoyed the exclusive right, liberty and privilege, since July 31st, 1906, of manufacturing, using and selling underreamers, embodying and containing the invention described, set forth and claimed in said letters patent No. 827,595, and but for the wrongful and infringing acts of defendant, as hereinafter set forth, your orator would now continue to enjoy the said exclusive rights and the same would be of great and incalculable benefit and advantage to your orator. [35]

V.

And your orator further shows unto your Honors that there is pending between the parties to this suit in equity in the same court, another suit in equity entitled Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant, No. A-4, in which infringement by the defendant herein is charged with respect to the letters patent sued under herein; that certain proofs have been taken on behalf of complainant in said other suit and an election has been made to stand upon claims sixteen and seventeen of said patent in suit; that since the commencement of taking proofs in said other suit, defendant herein, and in said other suit, has been found to have departed from its original procedure in the manufacture and sale of underreamers, and to have further and more elaborately infringed the letters patent sued under therein and herein, thereby as your orator alleges upon information and belief, infringing, or further

infringing, claims 2, 4, 8, 9, 10, 11, 12, 13, 14, 15, and 19 of the said patent therein and herein sued under, all as hereinafter more particularly alleged.

VI.

And your orator further shows unto your Honors and alleges upon information and belief that notwithstanding the premises, but well knowing the same, and without the license or consent of your orator, and in violation of said letters patent, and of your orator's rights thereunder, the defendant herein, Union Tool Company, as aforesaid, has, within the Southern District of California, Southern Division, aforesaid, within the year last past and prior thereto, and elsewhere, made, used, leased and sold, and is now making, using, leasing and selling underreamers embodying, containing and embracing the invention described, claimed and patented in and by said letters patent No. 827,595, and particularly as set forth and defined by claims [36] 2, 4, 8, 9, 10, 11, 12, 13, 14, 15 and 19 thereof, and has infringed upon the exclusive rights secured to your orator by virtue of said letters patent, and continues to and now is infringing thereon, and that the underreamers so made, used, leased and sold by the defendant were and are infringements upon said letters patent of your orator, and each of said underreamers contains and has contained in it said patented invention; and that although requested so to do, the defendant has refused to cease and desist from the infringement aforesaid, and is now making, using, leasing and selling underreamers containing and embracing the said patented invention, and

threatens and intends to continue so to do, and will continue so to do unless restrained by this court; and is realizing, as your orator is informed and believes, large gains, profits and advantages, the exact amount of which is unknown to your orator; and that by reason of the premises and the unlawful acts of the defendant aforesaid, your orator has suffered and is suffering great and irreparable injury and damage.

VII.

That for all the wrongs herein complained of, your orator has no plain, speedy or adequate remedy at law, and is without remedy, save in a court of equity where matters of this kind are properly cognizable and relievable.

To the end, therefore, that the said defendant may, if he can show why your orator should not have the relief herein prayed, and may, according to the best and utmost of its knowledge, recollection, information and belief, but not under oath, (an answer under oath being hereby expressly waived), full, true and perfect answer make to all and singular the matters and things hereinabove charged, your orator prays that the defendant may be decreed to account for and pay over to your orator the gains and profits realized by the defendant from and by reason of the infringement aforesaid, together with the costs of suit. [37]

And that the defendant may be decreed to account for and pay over unto your orator the damages sustained by your orator by reason of such violation and infringement of your orator's rights and that defendant be restrained from any further violation of said rights.

Your orator prays that your Honors may grant a writ of injunction, issuing out of and under the seal of this Honorable Court, perpetually enjoining and restraining said defendant, Union Tool Company, its attorneys, officers, agents, directors, workmen, servants and employees, and each and every of them, from any further construction, use, leasing or sale in any manner of said patented invention or any part or embodiment thereof, or the embodiment of any part thereof, in violation of your orator's rights as aforesaid, and that the underreamers now in the possession or use or under the control of said defendant, Union Tool Company, may be destroyed under order of this court; and that your Honors upon rendering the decree above prayed, may assess, or cause to be assessed in addition to the profits to be accounted for as aforesaid, the damages your orator has sustained by reason of such infringement, and that your Honors may increase the actual damages so assessed to a sum equal to three times of the amount of such assessment under the circumstances of the willful and unjust infringement by said defendant as herein set forth; and your orator further prays that a provisional or preliminary injunction be issued out of and under the seal of this Honorable Court enjoining and restraining the defendant, Union Tool Company, its officers, directors, agents, servants, employees, workmen and attorneys, and each and every of them, during the pendency of this suit, from any further infringement of said letters patent as aforesaid or otherwise; and that your orator may have such other and further relief as to your Honors may

seem proper and meet and in accordance with the equity of the case and with good conscience. [38]

May it please your Honors to grant unto your orator the writ of subpoena issued out of and under the seal of this court directed to the defendant, Union Tool Company, commanding it on a day certain and under a certain penalty fixed by law, to be and appear before this Honorable Court then and there to answer this Bill of Complaint and to stand to and perform and abide by such further orders and decrees as to your Honors may seem meet in the premises.

And your orator will ever pray.

ELIHU C. WILSON.

RAYMOND IVES BLAKESLEE,

Solicitor and Counsel for Complainant.

728-29-30 California Bldg.,

Los Angeles, California.

State of California,

City of Los Angeles,

County of Los Angeles,—ss.

On this 29th day of January, 1915, before me personally appeared Elihu C. Wilson, who being duly sworn did depose and say that he is the complainant mentioned in the foregoing Bill of Complaint; that he has read the Bill and knows the contents thereof, and that the same is true to his knowledge and belief, except in so far as matters are therein stated on information and belief, and as to these matters he verily believes them to be true.

ELIHU C. WILSON.

Subscribed and sworn to before me, this 29th day of January, 1915.

[Seal]

TYCIE FULLEN,
Notary Public in and for the County of Los Angeles,
State of California.

My Commission expires May 3, 1918. [39]

[Endorsed]: No. B-62. United States (District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity. Motions and Notice of Motion for Leave to Amend and Consolidate. Received a copy of the within Motions, this 29th day of January, 1915. Frederick S. Lyon, Solicitor for Defendant. Filed Jan 30, 1915. Wm. M. Van Dyke, Clerk. By R. S. Zimmerman, Deputy Clerk. Raymond Ives Blakeslee, 728-30 California Building, Los Angeles, Cal., Solicitor for Complainant. G. [40]

At a stated term, to wit, the January term, A. D. 1915, of the District Court of the United States of America, in and for the Southern District of California, Southern Division, held at the courtroom thereof, in the city of Los Angeles, on Monday, the eighth day of February, in the year of our Lord one thousand nine hundred and fifteen. PRESENT: The Honorable BENJAMIN F. BLEDSOE, District Judge.

No. B-62—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Order Granting Motion for Leave to Amend Bill of Complaint, etc.

This cause coming on this day to be heard on a motion for leave to amend the bill of complaint, and also coming on to be heard on a motion to consolidate said cause with cause No. A-4—Equity, between the same parties; Raymond Ives Blakeslee, Esq., appearing as counsel for complainant; Frederick S. Lyon, Esq., appearing as counsel for defendant; and said motion to amend bill having been presented by counsel; it is ordered that complainant's motion for leave to amend his bill of complaint be and the same hereby is granted; and it is further ordered that defendant's motion to dismiss the bill of complaint be taken as a motion to dismiss the bill of complaint as hereafter amended pursuant to leave now granted, and it is further ordered upon counsel for complainant waiving service of notice of motion to dismiss, that this cause be, and the same hereby is continued one (1) week for hearing on motion to dismiss bill of complaint and the motion to consolidate this cause with cause No. A-4—Equity. [41]

At a stated term, to wit, The January term, A. D. 1915 of the District Court of the United States of America, in and for the Southern District of California, Southern Division, held at the court-room thereof, in the city of Los Angeles, on Monday, the fifteenth day of February, in the year of our Lord, one thousand nine hundred and fifteen. Present: The Honorable BENJAMIN F. BLEDSOE, District Judge.

No. A-4—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Order Granting Motion to Consolidate Causes, etc.

This cause coming on this day to be heard on a motion to consolidate this cause with case No. B-62—Equity, between the same parties, and also to be heard on defendant's motion to dismiss the bill of complaint; Raymond Ives Blakeslee, Esq., appearing as counsel for complainant; Frederick S. Lyon, Esq., appearing as counsel for defendant; and said motions having been presented by counsel for the respective parties; and this cause having been submitted to the Court for its consideration and decision on said motions and the presentation thereof; it is by the court ordered that the motion to consolidate this cause with case No. B-62—Equity, between the same parties be. and the same is hereby granted, and

that, accordingly this cause be, and the same hereby is consolidated with said cause No. B-62—Equity Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant, under the number and title of said cause A-4—Equity; and it is further ordered that defendant's motion to dismiss the bill of complaint in No. A-4—Equity be, and the same is hereby denied, defendant being by the Court assigned to answer the bills of complaint in this cause as now consolidated within thirty (30) days. [42]

[Endorsed]: No. A-4—Eq. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Copy of Order Granting Motion to Consolidate and to Denying Motion to Dismiss, in A-4—Equity. Filed Sep. 13, 1916, Wm. M. Van Dyke, Clerk. By T. F. Green, Deputy Clerk. [43]

At a stated term, to wit, the January term, A. D. 1915, of the District Court of the United States of America, in and for the Southern District of California, Southern Division, held at the courtroom thereof, in the city of Los Angeles, on Monday, the fifteenth day of February, in the year of our Lord, one thousand nine hundred and fifteen; PRESENT: The Honorable BENJAMIN F. BLEDSOE, District Judge.

No. B-62—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

**Order Denying Motion to Dismiss Amended Bill of
Complaint, etc.**

This cause coming on this day to be heard on defendant's motion to dismiss the amended bill of complaint; Raymond Ives Blakeslee, Esq., appearing as counsel for complainant; Frederick S. Lyon, Esq., appearing as counsel for defendant; and said motion to dismiss the amended bill of complaint having been presented by counsel; and this cause having been submitted to the Court for its consideration and decision on said motion of defendant; it is now by the Court ordered that defendant's motion to dismiss the amended bill of complaint be, and the same hereby is denied; and it is further ordered, in accordance with the action this day taken in cause No. A-4—Equity, that this cause be, and the same is hereby consolidated with said cause No. A-4—Equity, defendant being by the Court assigned to answer the bills of complaint in this cause as now consolidated within thirty (30) days.

[Endorsed]: No. B-62—Eq. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Copy of Or-

der Denying Motion to Dismiss Amended Bill and Consolidating This Cause With Cause A-4—Eq. Filed Sep. 13, 1916. Wm. M. Van Dyke, Clerk. By T. F. Green, Deputy Clerk. [44]

United States District Court, Southern District of California, Southern Division.

IN EQUITY—No. B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Answer to Second Bill of Complaint.

Answering the Bill of Complaint of the complainant:

Defendant denies that at any time prior or subsequent to or on November 28th, 1905, complainant was the original, first or sole inventor of the alleged or any new or useful underreamer; denies that the same was not known or used by others before complainant's alleged or supposed invention or discovery thereof, or that the same had not been patented or described in any printed publication in the United States of America or any foreign country prior to complainant's alleged or supposed invention or discovery thereof or more than two years prior to complainant's alleged application for letters patent thereon in the United States of America; denies that

the same had not been in public use or on sale in the United States of America for more than two years prior to complainant's alleged application for letters patent therefor; defendant does not know and is not informed, save by said Bill of Complaint, as to whether complainant on November 28, 1905, or on or at any date or time, made application in due form of law or otherwise or at all, in accordance with the then existing laws, or otherwise or at all, for letters patent of the United States upon of for said alleged or pretended invention and therefore denies the same and prays that complainant be required to make strict proof thereof; admits that on July 31, 1906, pretended letters patent numbered [45] 827,595, were attempted to be granted or issued to complainant, but specifically alleges that said pretended letters patent were and are wholly void and of no effect; denies that such pretended letters patent were issued or granted according to or in due form of law or that thereby the alleged or any rights were granted or secured to complainant; denies that the pretended invention alleged to be set forth, described or claimed in or by said pretended letters patent is of great or any value whatever, or that the complainant has upon each and every underreamer manufactured, used or sold by complainant, marked thereon the word "patented" together with the day and date of said pretended letters patent; admits that on or about February 3, 1913, defendant received a notice that complainant claimed this defendant was infringing upon said pretended letters patent, but denies that

defendant ever had any notice of any such claim prior thereto; denies that the trade or public have generally or at all respected or acquiesced in the validity or scope of said pretended letters patent or in the alleged and pretended exclusive rights of complainant therein or thereunder; denies that the said alleged exclusive rights are, or except for the act or acts of this defendant would be, of great or incalculable or any value whatever to complainant.

Defendant denies that at any time whatever, either in the Southern District of California or elsewhere, it has ever made or used or leased or sold any underreamer or underreamers containing or embracing said alleged or pretended invention so alleged to be set forth, described, claimed or patented in or by said pretended letters patent No. 827,595, or has in any manner whatsoever infringed upon the alleged exclusive rights or right of complainant by virtue of said pretended letters patent, or that defendant has ever threatened or proposed or intended so to do; [46] denies that defendant has ever realized any gain, profit or advantage whatever from the use in any manner whatsoever of said pretended invention, or that by reason of any act or deed of defendant in the premises, complainant has suffered or will suffer great, irreparable or any injury whatsoever.

Defendant alleges that said letters patent No. 827,595 are void for the reason that the said Wilson unjustly obtained the same for what was in fact previously invented by another, to wit, Alexander Cummings, formerly residing in the city of Los Angeles,

California, and now a resident of Baldwin Park, California, who was using reasonable diligence in adapting and perfecting the same.

Defendant further alleges that the alleged and pretended invention in underreamers pretended to be patented in or by said patent No. 827,595, or things in all material and substantial respects the same as said alleged invention, had prior to the alleged invention thereof by complainant and more than two years prior to the alleged application of said complainant for said pretended letters patent, been patented and described in printed publications in the United States, and particularly in the following letters patent of the United States:

Number.	Date.	Inventor.	Invention.
734,833,	July 28, 1903,	Edward Double,	Under-reamers.
687,296,	Nov. 26, 1901,	Jacob S. Brown,	“ “
674,793,	May 21, 1901,	Edward North,	“ “
679,384,	July 30, 1901,	James M. Kellerman,	“ “
762,435,	June 14, 1904,	Thomas A. O'Donnell & Arthur G. Willard,	“ “
683,352,	Sept. 24, 1901,	John C. Swan,	“ “
496,317,	Apr. 25, 1893,	Patrick H. Mack,	“ “
717,469,	Dec. 30, 1902,	John C. Swan,	“ “
748,054,	Dec. 29, 1903,	Edward Double,	“ “
[47]			
796,197,	Aug. 1, 1905,	Edward Double,	“ “
403,877,	May 21, 1889,	Jeremiah E. Day,	“ “
668,340,	Feb. 19, 1901,	William Plotts,	“ “
819,042,	May 1, 1906,	Alexander Cummings,	“ “
704,136,	July 8, 1902,	J. P. Smith,	“ “

and had been so described and set forth in the following printed publications, to wit:

A catalogue printed and published at the city of Petrolia, in the Province of Ontario, Dominion of Canada, during the year 1901, by the Oil Well Supply Company, Limited, of Petrolia, Canada.

A catalogue printed and published at the city of Petrolia, in the Province of Ontario, Dominion of Canada, during the year 1903, by the Oil Well Supply Company, Limited, of Petrolia, Canada.

Defendant further alleges that the alleged improvement purporting to be patented by said pretended letters patent No. 827,595, or things in all substantial and material respects the same as said alleged improvement, or material or substantial parts thereof, and prior to the alleged or any invention or discovery thereof by complainant, had been known to and manufactured, sold and used by others in the United States of America, and particularly by the following, to wit:

Union Oil Tool Company, a corporation organized under the laws of the State of California, and having a factory and shop at Santa Paula, Ventura County, California, and Los Angeles, California, and the officers and workmen of said corporation, all of whom had such knowledge and did use the same, both at [48] Santa Paula, California, and Los Angeles, California;

Edward Double, residing in the city of Los Angeles, California, who had such knowledge and use, both at Santa Paula, California, and Los Angeles, California;

Thomas A. O'Donnell and Arthur G. Willard, both of Los Angeles, California, who had such knowledge

and use in the city of Los Angeles, California, and in the county of Los Angeles, California;

Leidecker Tool Company, a corporation, of Marietta, Ohio, who had such knowledge and use at Marietta, Ohio.

F. F. Collins Manufacturing Company, of San Antonio, Texas, who had such knowledge and use and made and sold the same at San Antonio, Texas.

San Antonio Machinery Supply Company, of San Antonio, Texas, who had such knowledge and use and made and sold the same at San Antonio, Texas.

James Copelin, residing in the city of San Antonio, Texas, who had such knowledge and use and manufactured and sold the same at San Antonio, Texas.

For a further and separate defense the defendant alleges:

That long prior to the filing of complainant's Bill of Complaint herein and to the commencement of this suit, complainant filed its Bill in Equity in this court against this defendant alleging the grant, issuance and delivery to complainant of the said pretended letters patent numbered 827,595, and alleging the infringement thereof by this defendant, all as will more fully and at large appear from said Bill of Complaint and the records, files, papers, documents and proceedings in said suit, which is designated as No. A-4 in equity in this court;

That in said suit defendant appeared and answered that said Bill of Complaint in said suit No. A-4 in equity in this court is still pending, undecided and undetermined and covers, embraces and extends to

the pretended cause or causes of action attempted to be set forth or alleged in or by the amended Bill [49] of Complaint in this suit, and that in or by said Bill of Complaint in suit No. A-4 in equity, complainant can secure any and all relief against this defendant in this court (if entitled to any whatsoever), concerning, respecting or referring to in any manner the said alleged letters patent or any infringement thereof by this defendant.

WHEREFORE defendant prays that this suit be dismissed and that it have judgment against complainant for its reasonable costs and disbursements in its behalf sustained.

UNION TOOL COMPANY,
By FREDERICK S. LYON,
Its Solicitor.

FREDERICK S. LYON,
Solicitor and of Counsel for Defendant.

State of California,
County of Los Angeles,—ss.

Lora M. Bowers, being first duly sworn, deposes and says that she is a stenographer in the employ of Frederick S. Lyon, and of legal age; that on Tuesday, March 16, 1915, she served the attached Answer upon Raymond Ives Blakeslee, solicitor for the complainant in the above-entitled suit, at his office, 728-730 California Building, in the city of Los Angeles, California, by handing to and leaving with Alfred Daehler, a draftsman in the employ of said Raymond Ives Blakeslee, a true and correct copy of said Answer, said Alfred Daehler being then and there in

charge of the office of said Raymond Ives Blakeslee.

LORA M. BOWERS.

Subscribed and sworn to before me at Los Angeles, California, this 16th day of March, 1915.

[Seal]

FREDERICK W. SMITH,

Notary Public in and for Los Angeles County, State of California. [50]

[Endorsed]: No. B-62. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity. No. B-62. Answer. Received a copy of the within Answer this March 16, 1915. ———, Solicitor for Complainant. Filed Mar. 17, 1915. Wm. M. Van Dyke, Clerk. By R. S. Zimmerman, Deputy Clerk. Frederick S. Lyon, 504-7 Merchants Trust Building, Los Angeles, Cal., Solicitor for Defendant. [51]

At a stated term, to wit, the January term, A. D. 1915, of the District Court of the United States of America, in and for the Southern District of California, Southern Division, held at the courtroom thereof, in the city of Los Angeles, on Monday, the nineteenth day of April, in the year of our Lord one thousand nine hundred and fifteen. PRESENT: The Honorable BENJAMIN BLEDSOE, District Judge.

No. A-4—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

and

No. B-62—EQUITY.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Order Consolidating Causes.

These causes coming on to be heard on complainant's motion made in cause No. 4—Equity, limiting the time within which the respective parties shall complete their proofs; Raymond Ives Blakeslee, Esq., appearing as counsel for complainant; Frederick S. Lyon, Esq., appearing as counsel for defendant; and it appearing that an order has heretofore been made consolidating said cause No. B-62—Equity with said cause No. A-4—Equity, but that no answer had been filed on behalf of defendant in No. B-62—Equity prior to the making of said order of consolidation, and that, therefore, said order of consolidation may have been, as to time, improvidently made; and it appearing that defendant's answer in said cause No. B-62—Equity is now on file

therein, it is now ordered that said cause No. B-62—Equity be, and the same [52] hereby is consolidated with said cause No. A-4—Equity, without prejudice, however, to the right of defendant to move, at or before the time of trial to set aside said order of consolidation, if so advised; and it is further ordered, pursuant to the stipulation of the parties, by their solicitors of record, in open court, that the testimony in said consolidated cause shall be taken as the testimony in said cause No. A-4—Equity was to be, and would have been, taken if no order of consolidation had been entered, as determined by the order of Court heretofore entered in said cause No. A-4—Equity, fixing the manner of taking proofs in said cause; and counsel for complainant having announced that, the proofs already taken and filed on behalf of complainant in case No. A-4—Equity make out complainant's *prima facie* case, not only in case No. A-4—Equity, but also in No. B-62—Equity, and are relied upon and are now offered as complainant's *prima facie* case in said consolidated cause; it is ordered by the Court, that said proofs may be considered and treated as complainant's *prima facie* case in the consolidated cause; and the motion of complainant for an order limiting the time within which the respective parties shall complete their proof having been argued by Raymond Ives Blakeslee, Esq., of counsel for complainant, in support thereof, and in reply by Frederick S. Lyon, Esq., of counsel for defendant; it is ordered that defendant have until and including July 31st, 1915, in which to put in its proofs in said consolidated cause,

and that complainant have until and including August 31st, in which to put in its proofs in rebuttal.

[Endorsed]: No. A-4—Eq. and B-62—Eq. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Copy of Order Consolidating Causes A-4—Eq. and B-62—Equity, S. D. Filed Sep. 13, 1916. Wm. M. Van Dyke, Clerk. By T. F. Green, Deputy Clerk. [53]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY—No. A-4.

CONSOLIDATED WITH NO. B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Stipulation.

And now, to wit, July 29, 1915, it is hereby stipulated by and between the parties to the above-entitled suits by their respective solicitors:

First. That the answers of defendant be considered as amended by alleging as follows, to wit:

“That the said Elihu C. Wilson was not the original or first inventor of the alleged or pretended invention in underreamers alleged to be described, shown or claimed in or by said alleged letters patent No. 827,595, and that things in all material and sub-

stantial respects the same as said alleged invention, had prior to the alleged invention thereof by complainant, Elihu C. Wilson, and more than two years prior to the alleged application of said complainant for said pretended letters patent been known to and used by the following named:

Fred W. Jones, then a resident of Santa Paula, California, and of Los Angeles, California, and who had such knowledge and use at Los Angeles, California.

Los Angeles Well Tool Works, a corporation organized under the laws of the State of California, and having its principal place of business at Los Angeles, California, and who had such knowledge and use and made such devices in the city of Los Angeles, California. [54]

California National Supply Company, a California corporation, having its principal place of business at Los Angeles, California, and National Supply Company, a Ohio corporation having its principal place of business at Toledo, Ohio, and a branch office of place of business at Los Angeles, California, both of said corporations had knowledge and use and offered for sale said devices at Los Angeles, California.

R. H. Heron Company, a California corporation, having its principal place of business at Los Angeles, California, and who had such knowledge and use and offered for sale and sold the said devices at Los Angeles, California, and at other points and places within the State of California, and elsewhere.

And that the said Fred W. Jones was the original, first and sole inventor thereof and reduced the said

invention to practise prior to the alleged invention thereof by complainant, Elihu C. Wilson, and sold a number of said devices in the State of California, United States of America, prior to the alleged invention thereof by the said Elihu C. Wilson."

Second. That defendant's time for taking proofs in this case under the Stipulation and order of the case heretofore made be and the same is hereby extended to and including August 21, 1915, and the complainant's time for taking rebuttal proofs is hereby extended to and including September 7, 1915, nothing herein to be construed to abridge the power of the Court to control all proceedings herein either as to time, form or substance.

Third. It is further stipulated and agreed that the defendant will not object to the setting of this cause for final hearing at any time that the cause may be heard provided, however, that such setting of this cause for final hearing shall not in any manner interfere with the final hearing or disposition of the suit, Cir. Ct. No. 1540, pending in this court wherein Union Tool Company et al. are complainants, and Wilson & Willard [55] Manufacturing Company are defendants.

RAYMOND IVES BLAKESLEE,
Solicitor for Complainant,
FREDERICK S. LYON,
Solicitor for Defendant.

[Endorsed]: No. A-4. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity. Stipulation.

Filed Jul. 31, 1915. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. Frederick S. Lyon, 504-7 Merchants Trust Building, Los Angeles, Cal., Solicitor for Defendant. [56]

*In the District Court of the United States, Southern
District of California, Southern Division.*

CONSOLIDATED CASES NOS. A-4 and B-62.
ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Memorandum of Decision.

Filed June —, 1916.

RAYMOND IVES BLAKESLEE, for Com-
plainant.

FREDERICK S. LYON, for Defendant.
CUSHMAN, District Judge:

The two foregoing causes have been consolidated and were tried and submitted at the same time as case #1540, this day decided. The consolidated cases both involve the same underreamer patent, and the general statement in No. 1540 is applicable to these causes.

The Double patent involved in that suit—#734,833—was granted in 1903. The application for the Wilson patent, #827,595, in suit in these two consolidated cases, was filed in 1905 and patent granted in 1906.

Departures by the defendant from the structure,

as described in the Double patent, it is complained by the complainant, infringe the patent in suit.

Cause A-4 was first begun, the alleged infringement being limited to claims 16 and 17 of the Wilson patent. Thereafter, it appearing, as alleged by the complainant, that defendant had further departed from the structure covered by the Double patent, by which he averred other claims of the patent in suit were infringed, cause B-62 was brought, on account of the latter alleged infringements. [57]

In both A-4 and B-62 novelty and infringement are denied; anticipation plead and the further averment made that another than Wilson was the real inventor of the device for which Wilson received the patent.

The evidence does not support the last defense and it was not urged upon the trial.

Defendant avers an infringement on the part of complainant of the Double invention, of which defendant is the licensee. This issue has already been decided in cause #1540 and need not be further considered.

In pleading anticipation, the defendant in these two causes has, insofar as a number of the alleged anticipating patents and devices set up are concerned, necessarily taken a position inconsistent with its contention in cause #1540. This, of course, is permissible, but the Court having already held in the decision this day filed in 1540 that Wilson's device infringed the Double patent and that the Double patent was not anticipated by the prior patents mentioned, it follows that, in so far as the alleged anticipating patents and devices preceded the Double in-

vention in point of time, necessarily, none of them anticipated the Wilson invention. In so far as the patents issued and the devices designed and used prior to the Wilson application for patent and not shown to be prior to the Double invention are concerned, no anticipation is found.

The O'Donnell & Willard patent #762,435 and the so-called "Jones' Round Nosed" reamer—a device never patented—have already been considered in cause #1540, this day decided. No further discussion of them is required. The Jones' so-called "Removal Bowl" reamer is the device, outside of the Double invention, chiefly relied upon in argument, by the defendant, to [58] show anticipation of the patent in suit. It will be considered in connection with cause B-62.

Claims 16 and 17 of the patent in suit in A-4 are as follows:

"16. An underreamer-cutter having two shoulders and a bearing-face on the inner side of each of the two shoulders of the cutter.

"17. An underreamer-cutter having a shank and a shoulder on either side of the shank of the cutter, each of said shoulders projecting at right angles to the shank of the cutter and having a bearing-face on its inner side."

These claims are to cover the structure of an article of manufacture of a particular form, that is the cutters, and not for a machine or combination.

Many of the claims made by Wilson were repeatedly rejected by the Patent Office on reference to Double's patents. The two foregoing claims were so rejected. Upon which rejection, Wilson's patent at-

torney wrote the Commissioner of Patents the following letter under date of May 12, 1906:

“It is noted that the leader from the character 4³ in Fig. 9 of the drawings is too long. Please remove the end thereof so that the leader will terminate at the right of a vertical drawn from the right edge of the shank 4’.

“Please add the character 4³ to the left of Fig. 9 and connect the same by a leader to indicate on the left of the view the bearing corresponding to the one indicated by the character 4³ at the right of the view.

“In fig. 4 apply the character 4³ in at least two places above and below the view and connect said character by a leader to indicate the bearings at the [59] edges of the cutters 4.”

The effect of this amendment to the drawings was to make plain that the inner bearings on the face of the cutters were out nearest its lateral face—entirely beyond the perpendicular side of the shanks. In this particular the letter concludes:

“It is believed that in view of the application of the additional characters to Figs. 9 and 4, the examiner will be able to pass claims 16 and 17. The Double cutter has its bearing face entirely across the cutter instead of on the inner side of the shoulders at the sides of the shank as specified in these claims.”

Upon this representation, the rejected claims 16 and 17 were allowed. By this action and upon familiar principles of estoppel, the claims were clearly limited and restricted to a cutter with its

inner bearings confined to its sides and not extending across its face. In all of defendant's alleged infringing devices, the bearings extend all the way across the cutter.

In an underreamer made by defendant—referred to in the evidence as Type “F”—and more particularly on account of which complainant brought the second suit, B-62, the lower end of the body extension, instead of being integral, has a block interposed between the lower ends, extending downward on either side of the central slot. With this interposed block in position, the inner bearings on the cutter extend entirely across its face. With this block left out, the body extension becomes more nearly of a pronged or forked formation.

Complainant contends that the use of the interposed block is only a pretense; that, although furnished as a part of the machine, it is detrimental and not intended to be used. Complainant relies upon the *Weed Chain* case (196 Fed. 213). [60]

The question so presented is one that can only be considered in connection with combination claims and is irrelevant upon consideration of these claims upon a feature of the cutter as an article of manufacture.

No infringement of claims 16 and 17 is shown. Therefore, decree will be for defendant in A-4.

B-62.

The claims of the patent alleged to be infringed in cause B-62 are numbered 2, 4, 8, 9, 10, 11, 12, 13, 14, 15 and 19. While included in the bill, upon the trial the contention that claims 10 and 15 were infringed was withdrawn. Although it was later contended

that claim 10 was infringed, yet effect will be given to such withdrawal and those claims are held not infringed.

Claims 2, 4, 12, 13 and 14 are all structural claims rather than combination claims. Prongs on the lower end of the reamer body forming a fork and each prong terminating in a lug are, in substance, made features in each one of these latter claims.

The Double invention contracted, to a great extent, the unappropriated field open to invention at the time of the Wilson application and materially narrowed the range of equivalents to which those claiming under the Wilson patent are entitled.

The particulars in which the Wilson device infringes the Double invention have already been pointed out in the decision this day filed in #1540. This marks the particulars in which the Wilson device was anticipated by the Double patent.

As already pointed out, while the Double reamer, Type "F" has a reamer body the lower end of which, before the reamer is completely assembled, may be said to form a fork, yet, when assembled by a block interposed at the bottom and held immovable at all times while the reamer is in operation, the form of extension covered by the Double invention is restored. . [61]

The specifications and drawings in the Double patent #734,833 only indicate an integral formation in this respect and such, the evidence shows, was the construction under it until after the granting of Wilson's patent; but the Double claims are not limited to such integral construction.

The main purpose of the forked formation, and the function to which it contributed, was, on the collapse of the cutters, to allow the cutter shank to swing in between the fork instead of the cutters swinging entirely over the lower end of the reamer body. In this respect none of the devices made by the defendant encroach in any way upon the patent in suit.

As already stated, complainant contends that defendant, in interposing the removable end block, has *restored* to a subterfuge; that it is a mere pretense of adhering to the operative form of structure covered by the Double patent; that it is not intended that the block remain in the machine in operation; that it is altogether a detriment to leave it in position while the machine is in use. There was testimony by a salesman that, on one occasion, he had seen one of defendant's reamers of Type "F" being used without an end block. There is no testimony one way or another why in this particular operation the block had been left out.

In *Weed Chain Tire Grip Co. vs. Cleveland Chain & Mfg. Co.* (196 Fed. 213) the Court found that a very palpable subterfuge was made use of to colorably avoid infringement. In *Parsons Non-Skid Co. vs. Atlas Chain Co.* (198 Fed. 399), involving the same patent in question in the *Weed Chain* case, although not the same parties, the Court found that the "natural, usual and preferential" use of the defendant's device would infringe.

There is no such conclusive state of facts in the present case. There is much testimony concerning this matter, but from the fact that, with the block left out, there would be but [62] a slight inner bear-

ing afforded the head of the cutter, I am convinced that it was not intended that the block should be discarded when the machine was in use, nor would such course likely be followed usually.

As respects the forked formation permitting the reamer to be assembled from the bottom rather than from the top, as in Double's original invention, and in so far as the claimed added advantage of being able to remachine more effectively the pronged structure of the Wilson device than the hollow slotted extension of the Double structure are concerned, these are not, directly, matters affecting in any way the mode of operation of the machine and do not show invention; nor more than mere mechanical ability. As to these claims, defendant does not infringe.

The remaining claims Nos. 8, 9, 11 and 19 are combination claims and are as follows:

“8. A hollow underreamer-body terminating in prongs forming a fork, said prongs having shoulders on their inner faces to form ways, cutters in said ways, means for operating the cutters, and a detachable cross-piece connecting the ends of the fork.

“9. An underreamer-body terminating in prongs forming a fork and provided with shoulders on the inner faces of the prongs which form cutter-ways and terminate in downwardly-projecting lugs, and cutters mounted between the prongs of said fork and having shoulders inside the fork and faces to bear on the projecting lugs.”

“11. An underreamer-body terminating in

prongs forming a fork having beveled faces at the ends of its prongs, cutters having shoulders to ride over said beveled faces, and means for suspending said cutters in said body.” [63]

“19. An underreamer comprising a body terminating in two prongs, and cutters each having two shoulders and a bearing-face on the inner side of each of the two shoulders to engage said prongs.”

The essence of claim 8 is the “detachable cross-piece connecting the ends of the fork.” What has already been said is applicable to this claim.

When this claim was first presented to the Patent Office, it was rejected on reference to Double’s inventions. The Commissioner reciting that Double’s patent No. 796,197 showed “a cross-piece at the end of the forks.” After such rejection, upon further petition on behalf of the patentee, in which it was urged upon the Commissioner that Double’s No. 748,054 did not show a fork, the claim was allowed.

Unless it was intended to restrict this claim to that feature of the fork allowing the collapse of the cutters, it would appear reasonably certain that a misunderstanding was created and a mistake made in the Patent Office in this patent, at its ruling that Double’s patent 796,197 showed “a cross-piece at the end of the fork” never was answered by the patentee.

In Double’s patent No. 796,197, figures 2 and 3 show an end block and the specifications recite: “this end block 10 is secured on the ends of the walls 3³ by a pin or key 22.” The walls 3³ referred to form a fork at the lower end of the extension and the block

10 is held between these forks by the key 22, substantially in the same manner as in Type "F" claimed to infringe the patent in suit. [64]

No. 796, 197.

Patented Aug. 1, 1905.

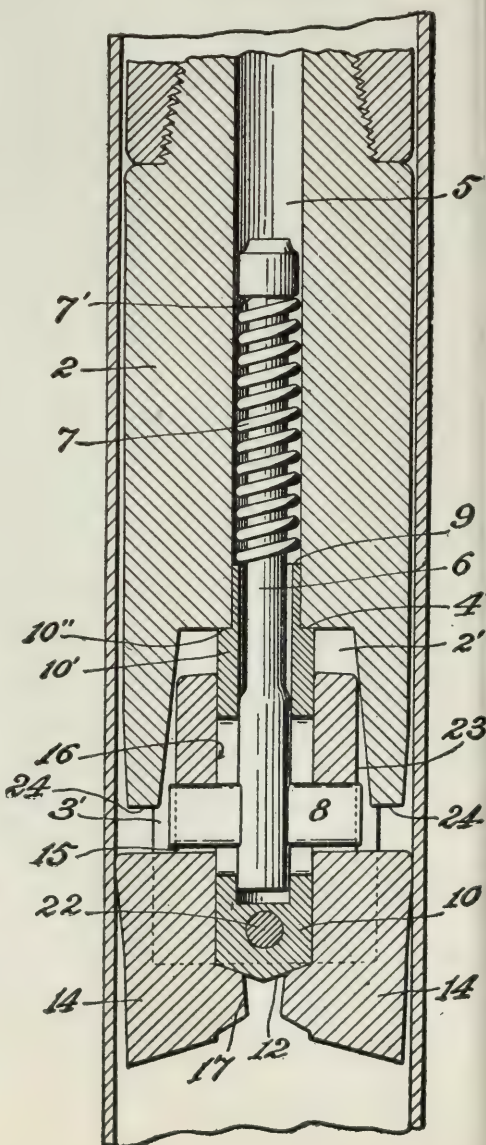
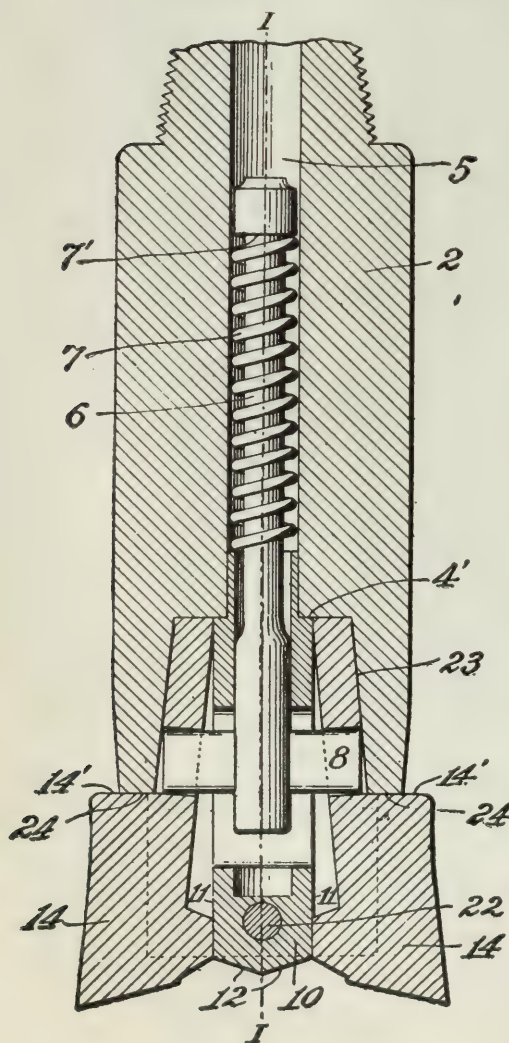
E. DOUBLE,

Underreamer,

Application filed Dec. 18, 1902.

Fig. II.

Fig. III.



To make an integral construction of separate elements or to make separate elements into an integral construction only for convenience in assembling, where it does not affect the method of operation, does not show invention. In any event, with [65] the detachable bolt between the prongs in Wilson's device, the cutters are permitted to collapse between the prongs. With the detachable block between the prongs in Type "F" of Double, the cutters collapse over the lower end of the reamer body extension, without passing between the prongs in any way, so that, in any event, as long as the defendant has confined itself to the original outline of its structure, there is no infringement of this claim.

The so-called "Jones Removable Bowl" reamer, defendant also contends, is an anticipation of the patent in suit. Only a very few machines of this design were made. These machines were manufactured and sold after the time of patenting Double's device and more than two years before the application of Wilson for the patent in suit.

In the Jones removable bowl reamer, the extension is forked to form bearings, but the enclosing bowl, which takes the place of the enclosing recesses or pockets of the Double and Wilson—in which the cutter-shanks are seated—is unbroken by any slotting, as occurs in the Double and Wilson to allow the shoulders on the same to contact with the foot of the casing to cause the collapse of the cutters.

This removable bowl reamer anticipated the forking of the lower extension of the patent in suit in so far as permitting the rod integral with the head or tee

thereon—which carries the cutters—to be inserted from the bottom is concerned. These forks in the removable bowl reamer also form ways for the cutters; but the forks in this reamer were not joined at the bottom in any way. The shanks of the cutters bore at all times against the prongs and did not collapse between them. The bearing at the end of the prongs afforded the inner face of the cutter-head in the removable bowl reamer does not anticipate the bearing afforded by the “lug” face of the patent in suit, for, in the removable [66] bowl reamer, the bearing afforded is considerably less across than the diameter of the extension of the reamer body, or bowl.

In the Double invention and conception, there was nothing in the nature of a lug or the lugs 2' of the Wilson patent. In claim 11 these lugs are not mentioned and, in so far as the action described, of the cutter shoulder riding over the beveled face of the prongs is concerned, there is neither an additional function nor advantage given to what was already present in the Double conception. Claim 11 is, therefor, not infringed.

Passing to claims 9 and 19, it has already been found that, as ways for the cutter to slide, or ride on, the faces of the prongs and lugs were no more than equivalents of the ways found in the Double invention; but, in so far as these prongs or lug-faces afforded bearings for the cutter when in reaming position is concerned, a different question is presented, and this is the feature covered by claims 9 and 19.

In the machine of the Double patent and original design, the slotted web of the lower extension helped

to form a pocket for the cutter and furnish the in-thrust and out-thrust bearing for the cutter-shanks and extended to the very bottom of the reamer body. This, necessarily, resulted in two things: an inner bearing for the cutter head, narrow as compared with the diameter of the extension upon the reamer body, and weakened to some extent by the slots therein.

In the patent in suit, the lower portion of the outer web is cut away, giving the cutter less lateral and greater in-thrust bearings. The lugs on either side are thereby created. The outer face of these lugs form bearings for the inner shoulder on the cutters. This formation enables the maker—because of the removal of the side web—to give the cutters a wider inner face and inner bearings at the outer side of the inner face of the cutter. [67]

The bearings on the “lugs” thus afforded—being in the direction of the extension of the enclosing web, necessarily, make a stronger formation than the bearing confined, as in the original Double design, to the slotted intersecting cross web. The broader cutter-head and broader bearing furnished by the device of the patent in suit, obviously, tend to lessen any tendency of the cutters to twist in operating and there is testimony in the cause, which I am inclined to credit, that, with the narrower Double cutter, the work of the reamer is more likely to result, under certain recurring conditions, in what is termed “key-holing,” that is, in the cutters which are hung opposite to each other, each getting started to cut downward in the same place and not reaming uniformly around the hole.

In the so-called "Double Improved" underreamer and in Type "F," with the interposed block in position, a lug at the lower end of the reamer body appears and, with the block removed in Type "F," two lugs appear, in relatively the same position and with relatively the same bearing faces as those upon the lugs of the patent in suit.

In so far as these bearings in defendant's "Double Improved" and Type "F" extend upon the faces of the lug or lugs beyond the sides of the diameter of the pocket in which the cutter is mounted, they are mechanical equivalents of the bearing on the outer face of the lugs in the patent in suit, and the same is true of the widened portion of the inner face of the cutter adapted to bear upon such portion of the face of the lug. It matters not that, in the device shown in evidence, the cutter head extends but a little distance upon this bearing, for to that extent, defendant has appropriated what does not belong to it and, therefore, infringes.

Upon the argument, it was contended by the defendant, that the only novelty and patentable feature of the patent in [68] suit was the pronged formation which permitted the collapse of the cutters between the prongs. If cutting away the interposed web in the Double device to allow the cutters to collapse more completely was patentable, on the same principle, cutting away the side web to give the cutter yet a greater bearing was also patentable and, if appropriated, infringement results.

In the earlier Double devices there were secondary dovetails adjacent to the junction of the cutter-head

and shanks, with corresponding ways in the inner faces of the extension, forming the recess in which the cutter is mounted on the body. These added ways caused an outward flare at the mouth of the recess, or pocket. As these ways were made deeper and the flare increased, a wider bearing would be given an opportunity for a wider faced cutter to bear upon it; but when defendant departed from this form of construction and entirely sheared away the side web of the extension to form a lug, the bearing faces to accommodate the wider cutter-head, he appropriated the invention and conception of Wilson, and particularly of the patent in suit. The fact that defendant did not appropriate the, perhaps, relatively more important conception of Wilson, whereby the cutter-shanks were allowed to collapse between the prongs, does not excuse it, or take from the infringement it has practised, for the seat or bearing of the cutter-head on these faces, or lugs, is not dependent upon the swing in collapse of the cutter-shanks between the prongs.

30 Cyc. 977, note 15.

Therefore, it is held that the machine of the defendant infringes claims 9 and 19 of the patent in suit. Decree for injunctive relief be granted. [69]

[Endorsed]: Consolidated Cases in Equity No. A—4 & B—62. In the District Court of the United States, for the Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Memorandum Decision on Merits. Filed Jun. 20, 1916. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. [70]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY—No. A-4, B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Order Granting Rehearing.

And now, to wit; June 27, 1916, on motion of defendant's solicitor, Frederick S. Lyon, a rehearing is allowed and granted.

EDWARD E. CUSHMAN,

District Judge.

[Endorsed]: No. A-4 & B-62. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson v. Union Tool Company. Order Granting Rehearing. Filed Jul. 1, 1916. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. [71]

*In the District Court of the United States, Southern
District of California, Southern Division.*

IN EQUITY—CONSOLIDATED CASES

Nos. A-4—B-62.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Memorandum of Ruling on Rehearing.

RAYMOND IVES BLAKESLEE, for Complainant.

FREDERICK S. LYON, for Defendant.

CUSHMAN, District Judge.

Prior to the order consolidating A-4 and B-62, much was said by complainant's counsel in the proceedings in A-4 to support the contention now made by defendant upon its petition for a rehearing; but it must be borne in mind that such statements were made with a view to securing—after the taking of complainant's opening proof, or the greater part of it—a stipulation from defendant's counsel to waive complainant's election (which had been announced early in the taking of such proof) to stand—in A-4—upon claims 16 and 17 of the patent and to discontinue the suit upon the other claims of the patent. The stipulation was not made; B-62 was begun and consolidated with A-4.

All that is said by complainant's counsel, after the commencement of B-62, and especially after the consolidation—upon which statements defendant relies—does not warrant the narrowing in any way of the issues tendered by the allegations of bill in B-62. Especially is this true in view of the notice given by complainant's counsel after such consolidation and before defendant began taking testimony. This notice was as follows: [72]

“Complainant gives notice to the defendant at this time that alternative to any disposition

which may be made of equity suit No. B-62, consolidated by the order of the Court with equity suit No. A-4, and thus constituting at present the suit known as equity suit No. A-4 consolidated, in which these proceedings are being conducted, namely, any disposition which may be made of said equity suit No. B-62 at the final hearing of this case with respect to such consolidation of said two cases complainant at such final hearing will reply upon claims Nos. 2, 4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 19, of the Wilson Patent in suit herein. This notice of alternative attitude or position is given at this time in order that defendant may be apprised in the premises before commencing the taking of its proofs."

That which was said by counsel for complainant after the commencement of B-62 is more reasonably explained by giving effect to the following considerations:

The main purpose in bringing B-62 was, doubtless, to determine the question of the infringement, by Type "F," of several claims of the patent withdrawn from consideration in A-4, by the election therein made by complainant to rely entirely on claims Nos. 16 and 17. Further, such statements were rather made as statements of what had been done and said theretofore in A-4 than as announcements of what it was proposed to do in B-62.

Nothing short of a clear, unequivocal election to withdraw or discontinue the suit as to alleged infringements set out in B-62 would suffice to narrow the

issues thereby tendered. The discontinuance in A-4 as to other claims—which was worked upon the election to stand upon claims 16 and 17—did not have the effect of a judgment upon the merits, or any other than that of a voluntary nonsuit. [73]

It is not necessary to determine the effect which such election would have had if A-4 had gone to final judgment before B-62 was begun and the consolidation with A-4 ordered. Counsel for complainant having withdrawn by the election, part of his claim for infringement, had a right to withdraw such election, and the rights of the defendant growing out of the election and the proceedings subsequent to such election and prior to notice of its withdrawal, would give no ground for denying complainant's ultimate right to again broaden the issues. The only effect of such election and the proceedings thereafter and prior to notice of its withdrawal, or amendment of election, would be to give the defendant, under certain circumstances, a right to the imposition of terms and the right to demand an opportunity to further cross-examine complainant's witnesses, theretofore testifying. The defendant having made no demand for such opportunity, must be held to have waived the same, and, in consideration of the scope of the cross-examination, the court feels that it was in no way prejudiced thereby.

It is probable if any of the witnesses already examined—whose testimony was relevant to the broadened issues—had died, the testimony of such witnesses would have to be stricken, or the first suit abandoned and a new one brought. But the Court is not called

upon to decide such a question. In so far as any question of splitting this cause of action is concerned, that matter was foreclosed by Judge Bledsoe's order denying the motion to dismiss B-62.

Counsel for defendant has again urged upon the Court consideration of the merits. The forked formation of complainant's reamer body was essential to the complete collapse of the cutters; but it was not essential to the coaction in the particular in which infringement is found. The fact that, in describing, in the claims, a member of a machine which performs two functions in such a way as to disclose a feature of its [74] fitness to perform one function, which feature is not essential to the discharge of its other function, does not warrant competitors in dropping such feature and thereby appropriate one-half of the invention and its advantage, nor prevent the court from according the patentee such a range of equivalents as will fairly protect him in the substantial merits of his invention. If so, form becomes everything and substance nothing.

Rehearing denied.

[Endorsed]: In Equity. Consolidated Cases. No. A-4—B-62. In the District Court of the United States, *Southern for the* District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Memorandum on Ruling on Petition for a Rehearing. Filed Aug. 26, 1916. Wm. M. Van Dyke, Clerk. By R. S. Zimmerman, Deputy Clerk. [75]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY—Nos. A-4B-62—CONSOLIDATED.

(Known as A-4 Consolidated.)

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Interlocutory Decree.

The above consolidated suits having come on regularly for final hearing before the Court upon the proofs and proceedings taken and had on behalf of the respective parties, and the suits having been submitted to the Court upon argument and briefs of Raymond Ives Blakeslee on behalf of complainant and Frederick S. Lyon on behalf of defendant, and due time having been taken for consideration thereof:

IT IS ORDERED, ADJUDGED AND DECREED,

I.

That complainant Elihu C. Wilson was the original, first and sole inventor of the underreamer set forth, described, disclosed and claimed in letters patent of the United States, No. 827,595 granted and issued the 31st day of July, 1906; that said letters patent are good and valid in law, particularly as to claims 2, 4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 19 thereof; that said invention was not known or used

by others before the said Elihu C. Wilson's invention or discovery thereof, or more than two (2) years prior to the application of said Elihu C. Wilson for said letters patent, nor patented nor described in any printed publication in the United States of America or any foreign country before the said Elihu C. Wilson's invention or discovery [76] thereof, or more than two (2) years prior to his application for said letters patent in the United States of America, nor in public use or on sale in the United States of America for more than two (2) years prior to said application of said Elihu C. Wilson for said letters patent, nor patented in any foreign country on an application filed more than twelve (12) months prior to filing of said application by said Elihu C. Wilson for said letters patent in the United States, and not abandoned; that said letters patent No. 827,595 were issued in due form of law and after due examination and procedure by the Commissioner of Patents as to the novelty and patentability and utility of said invention; that by the said letters patent there was granted and secured to the said Elihu C. Wilson, his heirs, legal representatives and assigns, for the term of seventeen (17) years from and after the 31st day of July, 1906, the sole and exclusive right, liberty and privilege to make, use and vend the said invention throughout the United States of America and the Territories thereof; that prior to the granting and issuance and delivery of said letters patent all proceedings were had and taken which were required by law to be had and taken prior to issuance of letters patent for new and useful inventions; and that

the title to said letters patent is in the complainant, as alleged in the bill of complaint.

II.

That the invention set forth, described, disclosed and claimed in and by said Letters Patent No. 827,595 is of great value and has been extensively practiced by the complainant; that immediately after the production of said invention by said Elihu C. Wilson underreamers embodying and containing the said invention went into extended and general use and largely displaced all other underreamers or tools for the purposes for which such underreamers or tools are intended, and became, together with the underreamers [77] manufactured by the defendant herein, the underreamers in general use in the State of California and elsewhere in underreaming wells; that the trade and public and users of such underreamers and kindred tools have generally respected, acknowledged and acquiesced in the validity and scope of said letters patent, and the exclusive rights and title of complainant in, to and under said letters patent, and the validity and scope of said letters patent and the title of complainant thereto have been generally acknowledged, respected and acquiesced in by all manufacturers except the defendant herein and its predecessors in interest, and save and except for the wrongful and unlawful acts of the defendant herein in infringement of said letters patent, complainant would have been in the continued and exclusive enjoyment and possession of all the rights, liberties and privileges under, and all the right, title and interest in, to and under,

said letters patent, and the same would have been of great and incalculable benefit and advantage to complainant; that upon each and every one of said underreamers manufactured, used or sold by or for complainant since the date of the granting, issuance and delivery of said letters patent, the word "patented" together with the day and date of the issuance of said letters patent, to wit, July 31st, 1906, have been plainly marked or stamped, thereby notifying the public of the said letters patent; that the defendant, long prior to the commencement of this suit and the filing of the bill of complaint herein, had full, complete and personal knowledge of, and had been notified in writing of, the granting and issuing of said Letters Patent No. 827,595, and of complainant's rights under said letters patent, and prior to the commencement of the wrongful and unlawful and infringing acts of defendant had full knowledge and notice of the grant, issuance and delivery of said letters patent to complainant, and of complainant's rights thereunder, and demand had been made upon defendant to respect the said letters [78] patent and not to infringe thereon, but that notwithstanding such notice the defendant has made, used, leased or sold or leased and sold, and has continued to make, use, lease or sell or lease and sell underreamers embodying the said invention of said letters patent No. 827,595.

III.

That the two suits Nos. A-4 and B-62 consolidated and joined and merged together to constitute this unitary cause of action were, upon order of the

Court, duly and properly consolidated, merged and joined together, whereby the pleadings, proofs, proceedings and offers in evidence of the parties in each of such suits became and are the pleadings, evidence, proceedings and proofs of the parties in such consolidated suit or cause of action, whereby the defendant herein further was, as to any such pleadings, proceedings, evidence and proofs of infringement and wrong doing charged therein, charged with infringement of claims 2, 4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 19 of the said letters patent No. 827,595.

IV.

That defendant has infringed upon said letters patent, and particularly upon claims 9 and 19 thereof, which are as follows:

9. An underreamer-body terminating in prongs forming a fork and provided with shoulders on the inner faces of the prongs which form cutter-ways and terminate in downwardly-projecting lugs, and cutters mounted between the prongs of said fork and having shoulders inside the fork and faces to bear on the projecting lugs.

19. An underreamer comprising a body terminating in two prongs, and cutters each having two shoulders and a bearing-face on the inner side of each of the two shoulders to engage said prongs, [79] by the manufacture and sale or lease, or sale and lease of the so-called "Double Improved" and "Type F Underreamers" like "Complainant's Exhibit Improved Double Reamer and Cutters" and Complainant's Exhibit Defendant's Reamer Type "D," and Complainant's Exhibit Reamer Type "E,"

and Complainant's Exhibit Reamer Type "F"; and that each of said Double underreamers or said underreamers like said complainant's exhibits embodies and contains and embraces the invention patented in and by said letters patent No. 827,595 and particularly embraced within each of said claims 9 and 19; that each of said Double underreamers or reamers like said mentioned complainant's exhibits is an infringement upon each of said claims 9 and 19 of said letters patent No. 827,595, but not upon the other or any other claims thereof; that each of said Double underreamers or underreamers like said complainant's exhibits was and were manufactured and sold or leased or sold and leased by defendant without the license or consent or permission and also against the will of complainant, and in infringement and violation of said letters patent No. 827,595 and of the exclusive rights and privileges and liberties thereby granted and secured to complainant.

V.

That defendant, its officers, directors, attorneys, agents, servants, workmen, employees and assistants, and each and every of them, be perpetually enjoined and restrained from manufacturing or causing to be manufactured, using or causing to be used, leasing or causing to be leased, selling or causing to be sold, in any manner, either directly or indirectly, any underreamer or underreamers like or embodying the construction or inter-relation or formation of parts of either "Complainants Exhibit Improved Double Reamer and Cutters," or Complainant's Exhibit Defendant's Reamer Type "D," or Complain-

ant's Exhibit Reamer [80] Type "E," or Complainant's Exhibit Reamer Type "F"; and from manufacturing or causing to be manufactured, selling or causing to be sold, using or causing to be used, leasing or causing to be leased any part or parts or elements calculated and intended to be combined or used as a part or feature of any underreamer or device in infringement of said letters patent No. 827,595, that is of claims 9 and 19 thereof, in any manner whatsoever, or from manufacturing or causing to be manufactured, using or causing to be used, selling or leasing or causing to be sold or leased, either directly or indirectly, any combination of parts or elements or features capable of being assembled together or used in infringement of said letters patent No. 827,595, that is of claims 9 and 19 thereof.

VI.

That complainant recover of the defendant the profits, gains and advantages which said defendant has derived, received, realized or made by reason of said infringement by defendant; and that complainant recover of said defendant any and all damages which complainant has sustained or shall sustain by reason of said infringement by defendant.

VII.

And it is hereby referred to Lynn Helm, Esq., as Special Master of this court, who is appointed *pro hac vice* to take and state the account of said gains, profits and advantages and to assess such damages, and to report thereon with all convenient speed, and the said Union Tool Company, its officers, directors,

attorneys, agents, servants, employees, workmen and assistants, and each of them, is and are hereby directed and required to attend before said Special Master from time to time as he may require, and to produce before him such books, papers, vouchers, documents, records or other things, and to submit to such oral examination, as the Special Master may require. [81]

VIII.

That complainant do have and recover judgment against defendant Union Tool Company for the sum of \$631.64, being eighty (80%) per cent of complainant's otherwise full costs and disbursements herein, minus forty dollars (\$40); and that the further questions of increase of damages be reserved until the coming in of the Special Master's report.

Dated September 8, 1916.

EDWARD E. CUSHMAN,
District Judge.

Decree entered and recorded, Sept. 8, 1916.

WM. M. VAN DYKE,
Clerk.

By T. F. Green,
Deputy.

[Endorsed]: In Equity—Nos. A-4-B-62 Consol. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Interlocutory Decree. Filed Sep. 8, 1916. Wm. M. Van Dyke, Clerk. By T. F. Green, Deputy. Raymond Ives Blakeslee, 728-30 California Building, Los Angeles, Cal., Solicitor for Complainant. [82]

*United States District Court, Southern District of
California, Southern Division.*

IN EQUITY—No. A-4.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Proceedings Had Tuesday, March 27, 1914.

Proofs taken for final hearing before I. Benjamin,
Notary Public, commencing on Tuesday, March 27th,
1914, at Los Angeles, California. [83]

*In the United States District Court, Southern Dis-
trict of California, Southern Division.*

IN EQUITY—No. A-4.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Depositions.

Testimony taken and proceedings had on behalf
of complainant pursuant to stipulations and notice
at the office of Raymond Ives Blakeslee, Esq., solici-
tor and counsel for complainant, at room 730 Cali-
fornia Building, Second Street and South Broad-
way, Los Angeles, California, commencing at the

hour of ten o'clock A. M., March 24, 1914, before I. Benjamin, Notary Public.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor and Counsel for Complainant.
FREDERICK S. LYON, Esq., Solicitor
and Counsel for Defendant.

It was stipulated as follows: That the reading over and signing of the depositions by the witnesses is waived; that all exhibits offered may be kept in the custody of counsel for the party offering the same until testimony is taken by the opposing party, whereupon such exhibits are to be delivered into the custody of counsel for said latter party, if requested, all exhibits to be opened to the inspection of counsel for either party at any time during ordinary business hours, and all exhibits offered to be returned to the clerk of the court upon the completion of all the proofs in the case. The record taken in the case, and all parts thereof, is to be returned to the clerk of the [84] court upon joint request of counsel for both parties. Printed copies of United States patents may be offered in evidence as furnished by the United States Patent Office, with full force and effect as if certified, subject to correction upon comparison with the records of the Patent Office. And, correspondingly, the filing dates appearing upon any such copies of United States letters patent, shall be considered as proof of the respective filing dates, subject to correction, if necessary, by the production of certified record pertinent thereto. An original and two carbon copies of the entire record in this case shall be produced, the original copy to be

returned to the clerk of the court, and the other two copies to be furnished respectively to counsel for the respective parties, the cost of taking and returning the entire record, including all said copies, to be taxed against the losing party.

It is further stipulated and agreed that any and all depositions may be taken stenographically, subject, however, to the demand of counsel for the respective party of the transcript of the direct examination of any given witness before being required to cross-examine said witness, such demand to be made at the completion of the direct examination. This is to apply only to the testimony taken in the city of Los Angeles and to expert testimony taken anywhere.

Deposition of Elihu C. Wilson, on His Own Behalf.

ELIHU C. WILSON, the complainant, appearing as a witness on his own behalf and being duly sworn, testified as follows:

Direct Examination.

(By Mr. BLAKESLEE.)

Q. 1. Please state your full name, age, place of residence and occupation.

A. Elihu Clemens Wilson; age, forty-three years; [85] residence, 734 Berendo Street, Los Angeles; occupation, manufacturer of oil-well machinery and president of the Wilson-Willard Manufacturing Company.

Q. 2. Can you state of your own knowledge who is the present owner of United States letters patent Number 827,595, issued July 31, 1906, to Elihu C.

(Deposition of Elihu C. Wilson.)

Wilson, then of Bakersfield, California, for under-reamers?

Mr. LYON.—Objected to on the ground it is incompetent and not the best evidence, and not the proper method of proof, and calling for the conclusion of the witness and not for a statement of fact.

A. I am the owner of it.

Q. 3. (By Mr. BLAKESLEE.) Can you produce the original letters patent referred to? A. I can.

Q. 4. Has anybody else, to your knowledge, been the owner of any part of the right, title and interest in and to and under said letters patent No. 827,595 at any time subsequent to the issue thereof?

Mr. LYON.—Objected to on the ground that it is leading and upon the ground stated in the objection to the preceding question.

A. No, sir; I am the sole owner.

Q. 5. (By Mr. BLAKESLEE.) Prior to the commencement of the present suit did you take any measure to notify the defendant Union Tool Company of the issuance of said letters patent No. 827,595 and making charge of infringement by said defendant of said letters patent?

Mr. LYON.—Objected to as leading and calling for the conclusion of the witness and not for a statement of fact. And if it has reference to any written instrument, the written instrument is the best evidence. [86]

Mr. BLAKESLEE.—We are laying the foundation for the production of any such written instrument, if any there may be. A. Yes, sir.

(Deposition of Elihu C. Wilson.)

Q. 6. Please state what steps you took of this nature.

A. According to my recollection a letter was forwarded to the Union Tool Company calling their attention to the fact that they were infringing my patent No. 827,595.

Q. 7. Do you know what if any letter was sent of that sort?

A. I will now produce a copy of the letter dated February 3, 1913, and addressed to the Union Tool Company, the defendant, Palmetto and Mateo Streets, in this city, and which was forwarded by my attorney at my request and signed by him. Attached to this letter are records of the postoffice which are the receipt for the delivery of the letter as it was sent by registered mail.

Mr. BLAKESLEE.—We offer in evidence on behalf of complainant the copy of the letter just discussed by the witness with the attached two receipts pertinent to its delivery, as “Complainant’s exhibit, copy of letter of notice to defendant,” and I will ask defendant’s counsel if he will admit the receipt of the original of this letter on or about the 4th day of February, 1913, by the defendant?

Mr. LYON.—The answer of the defendant admits that on or about February 3, 1913, the defendant received said notice, and the offer is therefore objected to as unnecessarily incumbering the record. There is no issue upon this question.

Mr. BLAKESLEE.—This copy of the letter is offered to make the record show the full contents of

(Deposition of Elihu C. Wilson.)

the letter, inasmuch as the answer only briefly refers to the receipt of notice of the patent. [87]

(The said document so offered in evidence is marked by the notary complainant's exhibit copy of letter of notice to the defendant, together with the title of the court and cause and the date on which the said document was offered.)

Mr. BLAKESLEE.—We offer also in evidence original letters patent of the United States No. 827,595, issued July 31, 1906, to Elihu C. Wilson for underreamers, as Complainant's Exhibit Wilson Patent.

(The said letters patent so offered in evidence are marked "Complainant's Exhibit Wilson Patent," together with the title of the court and cause and the date upon which the said letters patent were offered in evidence.)

Mr. BLAKESLEE.—In connection with the latter offer, we give notice that under the stipulation we will substitute for the original letters patent a copy furnished by the United States Patent Office, such copy not being at the present moment available.

Mr. BLAKESLEE.—The complainant further offers in evidence a certified copy of the "File Wrapper and Contents" of the said Wilson patent, No. 827,595, as "Complainant's Exhibit Wilson File Wrapper and Contents."

(Said "File Wrapper and Contents" are marked "Complainant's Exhibit Wilson File Wrapper and Contents," together with the title of the court and cause and the date upon which the said "File Wrap-

(Deposition of Elihu C. Wilson.)

per and Contents" were offered.)

Q. 8. (By Mr. BLAKESLEE.) Prior to the date of Complainant's Exhibit "Letter of Notice" did you give notice directly or indirectly in any manner to the defendant of the Wilson patent in suit?

Mr. LYON.—Objected to as leading and calling for a conclusion of the witness and not for a statement of fact. A. Yes, sir. [88]

Q. 9. (By Mr. BLAKESLEE.) In what way?

Mr. LYON.—The same objection and upon the further ground that it is assuming facts not shown by the testimony of the witness.

A. In the publication of my descriptive circular of the Wilson underreamer I set forth the features of the underreamer which were covered by my patents, and that circular was sent broadcast throughout the oil-well fields and, furthermore, the features of the Wilson underreamer patent were disclosed to Mr. Lyon, the attorney for the defendant.

Q. 10. (By Mr. BLAKESLEE.) When did you make such disclosure to Mr. Lyon?

A. On at least one occasion that I can recollect of when I visited him in his offices on Broadway, and which must have been in 1908-9—I think probably in 1908. I then showed him the patent that had been issued to me, and on other occasions my patent was discussed by Mr. Lyon and myself.

Q. 11. And what did you show Mr. Lyon at this time you have mentioned?

A. I showed Mr. Lyon the patent, Complainant's Exhibit Wilson Patent, and I also showed Mr. Lyon

(Deposition of Elihu C. Wilson.)

the principles of my invention and the features of them as I was manufacturing the underreamer, but prior to the time that I had applied for the patent I called his attention to the improvements embodied in the Wilson underreamer invention.

Q. 12. What was the time of this occurrence last referred to?

A. That was on an occasion in which Mr. Lyon was in Bakersfield, and, to the best of my recollection, was in the fall of 1905.

Q. 13. Do you remember what Mr. Lyon was doing in Bakersfield at that time [89]

A. Mr. Lyon was acting as counsel for Mr. John Brinkman, who was then defendant in a suit which had been brought by the Hardison Perforating Company. I believe they called it.

Q. 14. You have referred to the manufacture by you of these reamers. What reamers do you refer to?

A. The Wilson underreamer disclosed by the patent, Complainant's Exhibit Wilson Patent.

Q. 15. When did you commence such manufacture?

A. The first Wilson underreamer shown by that disclosure was made by the Baker Iron Works of Los Angeles on my order, I think in January or February of the year 1904.

Q. 16. And what have you to say as to the continuation of such manufacture since that time?

A. I have been manufacturing them, you may say, almost continuously ever since that. As soon as I

(Deposition of Elihu C. Wilson.)

could create a market for them orders were taken and reamers manufactured and sold to oil well companies and supply-houses.

Q. 17. Did the underreamers so manufactured by you bear any stamp, imprint or other marking, referring to the Complainant's Exhibit Wilson Patent.

Mr. LYON.—Objected to as leading and incompetent and calling for a conclusion of the witness, and not for a statement of fact.

A. Yes, sir. The underreamers are marked "Wilson underreamers," and as soon as the applicaiton for the patent was filed the underreamers were marked and stamped permanently on the body of the underreamer "Patents applied for," and after the issue of the patent in 1906 all reamers after that date were stamped and marked "Patented" and showing the date of the issue of the patent.

Q. 18. (By Mr. BLAKESLEE.) Can you produce at this time any such underreamer manufactured by you? [90] A. Yes, sir, I can.

(Witness produces underreamer on the floor of this room and which he designates by touching it.)

Q. 19. (By Mr. BLAKESLEE.) Will you please read off to us any imprint upon this reamer such as you have referred to, relating to the pendency of the patent application or the issuance of the patent.

A. I find stamped on the collar of the reamer body the words "Wilson patent, July 31, 1906" and the number of this underreamer is stamped "601."

(Deposition of Elihu C. Wilson.)

Q. 20. Can you state approximately the date of the first underreamer manufactured and sold by you bearing the marking which you have just read off, exclusive of the number of the reamer?

A. Probably in August of 1906.

Q. 21. Approximately, that is, in rough numbers, how many such underreamers have you manufactured and sold or caused to be manufactured and sold so marked?

Mr. LYON.—Objected to as leading and assuming facts not testified to by the witness.

A. Probably seven or eight hundred of them.

Mr. BLAKESLEE.—Attention is called to the fact that the witness testified that after the issuance of the patent he marked his reamers with the date of the patent, and the last question is based on that testimony.

Mr. LYON.—The record of the testimony speaks for itself.

Q. 22. (By Mr. BLAKESLEE.) In what leading old well fields were such underreamers, so marked, sold subsequent to the issuance of the Wilson patent?

A. The various oil fields of California, such as the Coalinga oil fields, the McKittrick field, the Midway field or [91] Taft field, Sunset and Maricopa fields, the Kern River field, the Santa Maria fields, the Santa Paula and Ventura fields, the Newhall fields, the Salt Lake old fields, the Whittier fields, the Fullerton fields, the La Habra fields, the fields in operation at San Diego and Newport, besides the

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Canadian oil fields, fields in Alaska, fields in Mexico, in India, Arabia, South America, fields in Illinois, and for water well use in Dakota.

Q. 23. In what State or States, excepting where you have mentioned the same, and, of course, excepting where you have mentioned the country, are or were the fields located which you have mentioned in your last answer?

A. The fields in the United States.

Q. 24. And in what State or States excepting where you have given the State?

A. The State of California.

Q. 25. Aside from such acts of manufacture, sale, use or leasing as you have charged the defendant Union Tool Company with, as infringement of Complainant's Exhibit Wilson Patent, in the bill of complaint in this suit, what, if any, underreamers have been made like the underreamers which you have testified you have made and sold as embodying the features covered by Complainant's Exhibit Wilson Patent, other than those made and sold by or for yourself, and by whom, if you know.

A. None other that I know of.

Mr. BLAKESLEE.—The Complainant offers in evidence the underreamer produced by the witness as "Complainant's Exhibit Wilson Underreamer."

Mr. LYON.—If the said underreamer is offered in evidence as an exemplification of the construction and interrelation of parts shown in the drawings or described in the specifications of Complainant's Exhibit Wilson Patent, the same is objected to as not

(Deposition of Elihu C. Wilson.)

corresponding thereto, and not in fact being an embodiment thereof. [92]

Mr. BLAKESLEE.—As to this objection, comparison will be the test, and the offer is made upon the testimony just given by the witness.

(The said underreamer is marked “Complainant’s Exhibit Wilson Underreamer,” together with the title of the court and cause and the date upon which the same was offered in evidence.)

Q. 26. (By Mr. BLAKESLEE.) Can you state approximately when Complainant’s Exhibit Wilson Underreamer was made?

A. Some time during the year 1912, I believe.

Q. 27. Where was it made? That is, at what manufactory?

A. Made in the plant of the Wilson & Willard Manufacturing Company near the corner of Fifteenth and Santa Fe avenue in this city.

Q. 28. Can you state of your own knowledge whether it has ever been actually used?

A. Yes, sir; the reamer has been used.

Q. 29. Do you know where or by whom?

A. No, sir; I do not, without looking up the records.

Q. 30. Please now refer to Complainant’s Exhibit Wilson Patent and briefly state the construction, inter-relation and mode of operation of the underreamer disclosed therein, and then in the same answer specify any difference in these respects which may exist as pertinent to Complainant’s Exhibit Wilson Reamer, so that we may know in what par-

(Deposition of Elihu C. Wilson.)

ticulars, if any, said reamer departs from the disclosure of the Complainant's Exhibit Wilson Patent.

A. The Wilson underreamer as disclosed in Complainant's Exhibit Wilson Patent consists mainly in a body of a single piece of two cutters, of a tee or mandrel to which the cutters are suspended in the reamer body, of a spring by which the cutters and tee are actuated, by a block which forms a seat for the spring, by two pins by which the block is held in position in the reamer [93] body, by a safety bolt 11, which bolt extends across the mouth of the reamer body, spanning from one prong to the other. The Wilson underreamer, Complainant's Exhibit Wilson Underreamer, embodies the same features exactly with the exception that a different form of a tee or mandrel is used, and that instead of using the block and dowel-pins to act in the seat of the spring and retaining means therefor, this exhibit uses a key which is a single piece extending through a slot in the reamer body and through the slot in the tee or mandrel, and on which key this spring rests.

Q. 31. Please state briefly the mode of operation of the underreamer disclosed in Complainant's Exhibit Wilson Patent, and, likewise, embodies in Complainant's Exhibit Wilson Reamer.

A. As I understand your question, you want me to state the method by which the reamer is put in operation?

Q. 32. The method in which it is put in operation and the action of the parts in the use of the reamer.

A. The underreamer when in use, of course, has

(Deposition of Elihu C. Wilson.)

its various parts assembled in the reamer body; and, in order to use the reamer, it is attached to the usual string of tools; and the cutters are pulled downward until they collapse over the ends of the spreading-bearings of the reamer body, and the cutters are then held in collapsed position, usually by a U-shaped clamp. The reamer is then inserted into the upper end of the string of casing, which casing is, of course, in position in the hole being drilled. It is then let down into the well inside of the casing, the same, of course, being attached to the string of tools, and suspended on the drilling cable. When the reamer emerges at the lower end of the casing, the tension of the spring draws the cutters 4 upwardly over the spreading-bearings of the reamer body, which bearings are downward-tapering projections on the end of the prongs of the reamer body. The cutters then rest [94] on the spreading bearings, having corresponding bearings 4³ on them to coact with spreading-bearings 9 on the reamer body. The expansion of the cutters is primarily caused by the upper corners of the shoulders 4³ of the cutters riding up on the tapered bearings 17 of the reamer body, and the expansion is completed by the cutters drawing up into position and resting upon bearings 9 of the reamer body. The reamer then performs its work by the vertical stroke of the reamer attached to the string of tools and, in turn, attached to the cable, and which is all operated by the motion of the walking-beam of the well rig. To remove the underreamer the tools are withdrawn into the casing by swinging them up on

(Deposition of Elihu C. Wilson.)

the cable by the use of the drilling engine, and the

I. B. shoulders

~~shells~~ 30 of the cutters strike against the

bottom of the casing or the casing-shoe, drawing them downwardly, or, rather, holding them stationary for a moment while the rest of the reamer is drawn upwardly until the spreading-bearings of the reamer body are withdrawn from between the bearings on the cutters 43, and the cutters can then close together sufficiently to permit them to enter the casing, and the tools together with the reamer are then withdrawn at the top of the casing.

Q. 33. Is there any distinction to be drawn between the mode of operation and method of use of the reamer disclosed by Complainant's Exhibit Wilson Patent and the mode of operation and the method of use of Complainant's Exhibit Wilson Reamer?

Mr. LYON.—Objected to as leading and calling for a conclusion of the witness and not for a statement of fact.

A. So far as its actual use in the hole, and so far as the methods of setting the reamer preparatory to running in the casing, or its withdrawal from the casing, there is no difference. There is a difference as I previously stated, in the manner of suspending the cutters, spring and tee in the reamer body.

Q. 34. (By Mr. BLAKESLEE.) Please now describe a little more minutely the construction of the cutters 4 of Complainant's [95] Exhibit Wilson Patent, and the location of the surfaces 4³ upon said cutters?

(Deposition of Elihu C. Wilson.)

A. The Wilson underreamer-cutter as disclosed in Complainant's Exhibit Wilson Patent consists essentially of a shank having dovetail shoulders on opposite sides of the shank, which shoulders coact within retaining means of the reamer body, and the body proper of the cutter, which body extends downwardly and is a continuation of the shank, and the lower end of which performs the cutting or reaming and constitutes the cutting edge of the cutter. The body of the Wilson underreamer-cutter is so constructed that it extends laterally at right angles to a vertical line with the shanks of the cutters forming shoulders or projections beyond the sides of the shank. These shoulders are provided with bearing faces designated 4³ in the patent. These bearing faces being on the back of the shoulders of the cutter body. By these extended shoulders or projections beyond the sides of the shank of the cutter the cutting surface or main cutting end of the cutter itself is widened and the bearings on the cutters are so placed as to brace it to the very best advantage.

Q. 35. And with what parts do these bearing faces co-operate in the expansion and contraction of the cutters?

A. These bearing faces on the back of the cutters, which bearing faces are designated 4³, coact

I. B. on
with the spreading-bearings ~~and~~ the reamer body itself when the cutters are being expanded and also in reaming position, such spreading-bearings being designated in the Wilson patent as 9 and 17.

(Deposition of Elihu C. Wilson.)

Q. 36. Upon what part or parts of the reamer body are such spreading-bearings 9 or 17 formed or provided?

A. On the projections or lugs which form the lower extremities of the prongs of the reamer body, the prongs being designated as 2.

Q. 37. Now, as to the portions of the bodies of the cutters lying between the bearing-faces 4³, please state how [96] they are positioned with respect to any part of the reamer body in the expanding and contracting or collapsing action?

A. There is no part of the Wilson reamer body which comes in contact with that portion of the Wilson underreamer-cutter.

Q. 38. And what is the arrangement of these bearing-surfaces 4³ with respect to the median or central portion of the cutter including the shank?

A. They are on opposite sides of the shank and project beyond the shank and downwardly below the end of the shank.

Q. 39. When the bearing faces 4³ are in engagement with the spreading bearings 9, is there any part of the reamer body or the prongs 2 thereof which confines the cutters or working ends thereof beneath the shanks and at the side of said working ends?

Mr. LYON.—Objected to as leading.

A. I don't know what you mean by the word "confines."

Q. 40. (By Mr. BLAKESLEE.) By "confines" I mean shuts them in or incloses them. That is, the working ends at the sides thereof.

(Deposition of Elihu C. Wilson.)

Mr. LYON.—The same objection.

A. No, sir; there is not.

Q. 41. (By Mr. BLAKESLEE.) Please state a little more fully the results obtained by providing the broadened working ends of the cutters which are so broadened to provide the shoulders at the sides thereof, and having the bearing-faces 4³.

A. The chief advantage is the increased cutting surface given the cutters by such a change. The underreamer, of course, cuts or reams the hole, enlarging it to a greater diameter than was produced by the usual drilling bit, which in practice is run before the underreamer is put in use. It is natural that the greater cutting surface we have, or, in other words, the broader [97] the cutters are the more of the circumference of this hole they ream or enlarge at each stroke of the tools. The reamers which had been in use and which were in use when the Wilson underreamer was first put on the market had much narrower cutters than were provided on the Wilson reamer, and the increased width of the cutters proved to be a great advantage in reaming the hole better and faster than had been accomplished by the other reamers. Also, another great advantage in this widening of the bodies of the cutters is the bracing action obtained by extending the bearings laterally, which better enables the cutter to withstand the rotating action in the reamer body. By "rotating action" I mean the tendency to revolve on the vertical axis while the cutters are in reaming position. It would be quite clear that by projecting these bear-

(Deposition of Elihu C. Wilson.)

ings as far away from the axis as possible, the rotating strain is better resisted.

Q. 42. And what co-operates with the broadened working ends of the cutters to oppose this tendency to rotate?

A. The downwardly projecting lugs or spreading means 2'.

Q. 43. My question related to the working ends of the cutters irrespective of the shank portions, and I will ask you to state what part or parts co-operate with those working ends, that is, the broadened working ends, to prevent this rotary motion?

A. The spreading-bearings on the reamer body.

Q. 44. Numbered what in the Wilson patent?

A. Number 9 and number 17.

Q. 45. Now, going back a moment to your previous testimony wherein you referred to the sending out of trade circulars descriptive of the underreamers manufactured by you, when did you first send out such circulars?

A. I don't remember the exact date. Probably during the year 1908-9. [98]

Q. 46. Can you produce one of those circulars at this time?

A. No, sir; I cannot, but I have them at the shop.

Q. 47. I will ask you, if possible, to produce one of those circulars at the afternoon session to-day.

(An adjournment is now taken by consent until 2 o'clock P. M. of this day at the same place.)

(Deposition of Elihu C. Wilson.)

Los Angeles, Cal., March 24, 1914,
2 o'clock P. M.

This being the time and place to which the further taking of depositions in this matter was continued, Elihu C. Wilson is recalled and his direct examination resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

Direct Examination (Resumed).

By Mr. BLAKESLEE.—The witness produces a booklet or circular. I note certain data written over or upon the face of this book.

Q. 48. Can you state what the significance of that data is and when it was put on?

A. I guess that was put on to-day.

Q. 49. And what does it mean?

A. I told my clerk, Miss Dauphine, to give me the date of the invoice covering these circulars, and this is the date that she gave us over the 'phone, and I see she has written it on this circular. This other notation must cover the issue of that second catalog.

Q. 50. That is, the second date?

A. Yes, sir; there is a date here December 19, 1911.
[99]

Q. 51. When, with reference to the first or earlier date, did you first distribute these hand-books?

A. Just as soon as we got them in our possession, which was unquestionably about July 7, 1909.

(Deposition of Elihu C. Wilson.)

Q. 52. How extensively were these distributed by you?

A. There were several thousand of them sent out. I do not know. I suppose we ordered these in five thousand lots, if I recollect right.

Q. 53. And in what particular localities?

A. They were mailed to all the oil companies in California, at least all those that we could obtain the addresses of, and I suppose we sent them to practically all the companies and to the supply houses throughout the State of California, and we sent them broadcast through the eastern oil fields in the eastern part of the United States, and also to many of the companies operating in foreign fields.

Q. 54. And these were sent out, I take it, under your supervision? A. They were.

Q. 55. I believe you have not definitely stated the relation, if any, of yourself to Elihu C. Wilson, the patentee of Complainant's Exhibit Wilson Patent.

A. I am the same party.

Mr. BLAKESLEE.—Complainant offers in evidence the hand-book just discussed by the witness as "Complainant's Exhibit Wilson Underreamer Hand-book."

Mr. LYON.—Objected to as incompetent, irrelevant and immaterial to the issues of this suit.

(The said hand-book so offered in evidence is marked "Complainant's Exhibit Wilson Underreamer Hand-book," together with the title of the court and cause and the date upon which the said hand-book was offered in evidence.) [100]

(Deposition of Elihu C. Wilson.)

Q. 56. (By Mr. BLAKESLEE.) In the use of the Wilson underreamer (and hereafter when I refer to the Wilson underreamer I mean the underreamer constructed substantially in accordance with the disclosure of Complainant's Exhibit Wilson Patent and Complainant's Exhibit Wilson Reamer, unless I specially differentiate between the same as to the one minor feature of difference which you have pointed out) please state what the particular stresses are to which the cutters are subjected in the reaming operations, and define those stresses by the directions of application or effectiveness.

A. The cutters of the Wilson underreamer when the reamer is in actual use reaming the hole, are subjected to several strains. The first is probably the I. B. impact

upward strain which is caused by the ~~intact~~ impact of the tools on the bottom of the hole or on the rim of the hole on which the cutters are being driven. This thrust is taken up at the extreme upper end of the shank of the cutters and applies to the bearing point on the reamer body which coacts with the upper end of the shank of the cutters. The second strain is the one caused by the tendency to drive the two cutters toward each other. The tendency in reaming in the hole is largely to crush the cutters toward each other as though the strain would tend to collapse them together. This strain is taken by the bearings on the extended shoulder of the cutter body 4³. This strain is borne by the spreading-bearings 9 on the reamer body, which bearings coact with

(Deposition of Elihu C. Wilson.)

bearings 4³ on the backs of the shoulders of the cutters. The third strain is an outward strain which sometimes occurs in reaming and which is a tendency to spread the cutters apart or force them outwardly from their reaming position. That strain is taken up by the dovetails on the shanks of the cutters 4² and which in turn is transmitted to the dovetails 2" on the body. This outward strain is also borne by the dovetails on the reamer body, said dovetails being on the inner faces of the two prongs, and are designated in complainant's [101] patent as 2". A fourth strain is the one which I have previously termed the rotating strain on the cutter, whereby the cutter tends to rotate axially and parallel with a line drawn vertically through the shank of the cutter and on an axis of the reamer body. This strain is partially resisted by the dovetails of the cutters 4² and the shoulders on the reamer body 2", but principally by the shoulders 4³ on the cutters and the bearings 9 of the reamer body.

Q. 57. Now, what if any relation exists between a relatively broader cutter body such as the one including the bearing-faces 4³ and the co-operation of the same with spreading-bearings such as 9 on the one hand, and the efficiency with which the inthrust of the cutters is opposed?

Mr. LYON.—Objected to as indefinite, uncertain and ambiguous as to what the intended comparison refers to.

A. I do not believe the question is clear to me.

Q. 58. (By Mr. BLAKESLEE.) I will ask you

(Deposition of Elihu C. Wilson.)

another question. Is my meaning clear to you?

A. It is not quite clear; no, sir.

Q. 59. Then I will withdraw the question and substitute as follows: As to the efficiency in opposing the intrust of the cutters which you have referred to, what have you to say as between a narrower cutter and a broader cutter such as the cutter of Complainant's Exhibit Wilson Patent, including the bearing-faces 4³?

A. The intrust or thrust which tends to collapse two cutters together in reaming is, of course, better resisted by the enlarged bearing which occurs on the backs or faces of the shoulders 4³ of the cutters.

Q. 60. In the Wilson Under-reamer over what portions of these bearing-faces 4³ do the co-operating surfaces of the spreading-bearings 9 extend? [102]

A. Over all of those two faces.

Q. 61. And what have you to say as to that provision or arrangement with respect to resisting both intrust and tendency to rotate, previously referred to, or either of the same?

Mr. LYON.—Objected to as leading and suggestive.

A. As I have previously stated, the greater amount of bearing surface we have there to resist that strain, the less the wear and the better the strain is resisted. And, furthermore, the further away from the center of rotation or axis of rotation of the cutter, the greater the leverage and the better the strain is resisted. Furthermore, in this form of cutter the strain is transferred from the dovetails almost en-

(Deposition of Elihu C. Wilson.)

tirely, you might say, to these projecting shoulders on the body of the cutters. This, of course, overcomes one of the greatest risks of breakage of dovetails on the cutters and reamer bodies. The position of these bearings are shown by the complainant's patent and transfers the bracing point or the spreading-bearing further down towards the cutting edge of the cutters, interposing the spreading means more directly between the points or cutting edges of the cutters where the inward strains are applied, producing a more positive means of maintaining the cutters in expanded position and, furthermore, it transfers the greatest strain on the cutter from the shank to the body portion of the cutter, which, being the heavier part of the cutter, is better able to resist that strain.

Q. 62. (By Mr. BLAKESLEE.) In the cutters of the Wilson underreamer what is the position of the outer lateral extremities or side portions of the body of the cutter with respect to the lines of extension of the dovetails on the shank of the cutter?

A. They project beyond the outside faces of the dovetail which are on the shanks of the cutters.

Q. 63. What have you to say with reference to the length of life of an underreamer-cutter, comparing a cutter such [103] as those of the Wilson underreamer, with a cutter the body of which is of lesser width? A. They will last longer.

Q. 64. And why?

A. In the first place, because the cutter has more material in it and can be dressed up to size more

(Deposition of Elihu C. Wilson.)

often. In other words, it requires a greater length of time to wear out the greater bulk of material in the wide cutter than it does the lesser bulk in the narrow cutter.

Q. 65. In the use of cutters of underreamers such as those of the Wilson underreamers, are the cutters discarded after they have once become dull?

A. They are not.

Q. 66. What is done when they become dull?

A. They are removed from the reamer body and heated to a high temperature in a forge and dressed out to size and resharpened, as we say, with a hammer, as such jobs are usually done, in a blacksmith fire or forge.

Q. 67. How, if in any manner, does the question of variation of width of cutter body effect this dressing out and sharpening operation?

A. The operation is practically the same, the difference being that with the wide cutter there is more material to dress out to size, and naturally, produces a longer life of the cutter.

Q. 68. Have you seen any other underreamers on the market than the Wilson underreamer?

A. I have.

Q. 69. Can you name a few of them, if there are more than one?

A. The reamer commonly known as the Double underreamer, of the Union reamer as it is sometimes known; the Swan underreamer; [104] the Austrian underreamer; and many other reamers which have been used.

(Deposition of Elihu C. Wilson.)

Q. 70. Can you produce a specimen of any of the underreamers which you have mentioned?

A. I can.

(The witness points out two underreamers lying upon the floor of this room.)

Q. 71. (By Mr. BLAKESLEE.) What are those underreamers known as respectively?

A. This reamer to the left is the portion of a reamer body of what is commonly known as the old style Double underreamer. The part of the body which is missing is merely the subjoint at the top which screws into the thread at the upper end of the reamer body or end opposite the mouth in which the cutters are placed.

Q. 72. Are the cutters which fit that underreamer before you? A. No, sir; they are not.

Q. 73. Have you any cutters before you which can be applied to that reamer and which might constitute a part of a Double underreamer as known?

A. We have here a cutter of the same design but for a smaller size reamer.

Mr. BLAKESLEE.—We will call this reamer or the reamer body with the detached cutter the old style Double underreamer.

Q. 74. What is the other underreamer before you?

A. The other underreamer is the lower portion or main portion of the body of the Double improved underreamer.

Q. 75. Have you any cutter which belongs to or fits that body?

(Deposition of Elihu C. Wilson.)

A. We have. These two cutters here are Double underreamer-cutters to fit that body and known as the cutters for the improved Double underreamer.
[105]

Q. 76. Where did you obtain these two Double underreamers before you in their present condition? That is, the parts thereof which are here?

A. This Double improved underreamer with the cutters were obtained in the Salt Lake oil field, just west of Los Angeles.

Q. 77. And when? A. Four or five days ago.

Q. 78. And the other one?

A. And this body together with the old style of cutter—the old style underreamer body—was brought in from the Whittier fields.

Q. 79. And when?

A. I think that body was brought in only yesterday, and also the cutter.

Mr. BLAKESLEE.—I will ask defendant's counsel if he is willing to admit that these parts of the old style and improved Double underreamers just discussed are the products of defendant's manufacture?

Mr. LYON.—They bear the imprint of the Union Tool Company on the sides and have the general appearance of having been manufactured by the defendant company. I have no personal knowledge in regard to either of them, and if they are to be offered in evidence I will object to them on the ground they are not a complete exhibit of either of such underreamers. I have no doubt in my mind but what so

(Deposition of Elihu C. Wilson.)

far as they exist here before us they were manufactured and sold by the Union Tool Company, the defendant in this case, of the Union Oil Tool Company, its predecessor in interest.

Mr. BLAKESLEE.—But that may not satisfy the doubt in the Court's mind. I wish to know how much farther we are to be put on our proofs as to these products. And if counsel is not prepared to stipulate, we will have to go farther in that [106] direction. At this point I may state that complainant elects to stand upon Claims 16 and 17 of Complainant's Exhibit Wilson Patent, taken, of course, together with the drawings and specifications of said patent, and the other claims of the patent in so far as they are interpretative of the invention. But as to the question of claims separately and distinctly considered, we will stand upon claims 16 and 17 of said patent in this suit. For the purpose of this suit in view of the election just made, complainant does not consider that it is necessary to produce the further parts of the two Double underreamers just produced, believing that verbal testimony can be taken as to the mode of operation of the parts before us which will sufficiently point our charge of infringement. This statement may somewhat assist counsel in determining whether he is prepared to stipulate as proposed.

Mr. LYON.—The way I understand the claim of infringement is that it is limited to claims 16 and 17 and that it is conceded that defendant has not infringed any one of the claims 1 to 15 inclusive, or 18,

(Deposition of Elihu C. Wilson.)

19 and 20 of the Complainant's Exhibit Wilson Patent. Is that correct?

Mr. BLAKESLEE.—I don't think it is necessary to concede that there has been no infringement of other claims, but for the purposes of this suit I state that we will stand solely upon claims 16 and 17 taken together with the other parts of the patent, namely, the specifications and drawings and the other claims in so far as they are merely interpretative of the disclosure. I am dealing now purely with the issue of invention as reflected by said claims subject, of course, to such interpretations thereof as may be made.

Mr. LYON.—In the bill of complaint in this case the complainant has charged generally the infringement of Complainant's Exhibit Wilson Patent and at this time complainant evidently elects to abandon the charge of infringement of any of the [107] claims except 16 and 17.

Mr. BLAKESLEE.—That is correct, in so far as this suit is concerned, when we are dealing specifically with the claims.

Mr. LYON.—I have no desire to be captious in this case. So far as I can see at the present time, the body, so far as it is now before us, of the so-called "old style Double reamer," seems to be without change as manufactured by the Union Oil Tool Company, the predecessor in interest of the present defendant. The cutters of such reamer apparently have not been produced nor have the sub nor the spring-actuated rod or spring, so that it is impossi-

(Deposition of Elihu C. Wilson.)

ble to ascertain from such exhibit what the cutters were or what the mode of operation or inter relation of parts were. I am willing to admit that that body, so far as it stands, was made by the Union Oil Company, predecessor in interest of the present defendant, and was made at Los Angeles, California. And I will further state that from the date of the incorporation of the defendant company in about 1907-8 to the present time, the defendant company has manufactured in various sizes underreamers bodies substantially like this old styled body at Los Angeles, California, at Chicago, Illinois, and at Torrance, California. But I call counsel's attention to the fact that claims 16 and 17 of the Wilson patent, in suit, are apparently and solely of an underreamer-cutter, which cutter is not produced in this exhibit, and which would seem to be a very material part to be produced.

Mr. BLAKESLEE.—Complainant offers in evidence the old style underreamer body as to which counsel has just stipulated as Complainant's Exhibit Old Style Double Underreamer Body.

Mr. LYON.—The offer is objected to as fragmentary, for the reasons stated in the stipulation, and, for this reason, the further objection is made that the exhibit is incompetent. [108]

(The said underreamer body so offered in evidence is marked "Complainant's Exhibit Old Style Double Underreamer Body," together with the title of the court and cause and the date upon which the same was offered in evidence.)

(Deposition of Elihu C. Wilson.)

Mr. LYON.—With reference to the cutter produced by the witness and which the witness has said was an old style Double underreamer-cutter of a smaller size than the cutter furnished for use in Complainant's Exhibit Old Style Double Underreamer Body, I am prepared to stipulate that the same was manufactured either by the said Union Oil Tool Company or the Union Tool Company, defendant herein, but I am not prepared to state for what particular underreamer, or, at the present time, the exact size of such underreamer, nor which particular style, although there seems to be a letter J on the inner face of the shank of the cutter which may hereafter serve to identify it. This cutter appears to have been practically worn out. I will produce, if complainant so desires, cutters of this style manufactured in Los Angeles County by either the Union Oil Tool Company or the Union Tool Company, the defendant herein, either prior or since the commencement of the suit as complainant may desire. If counsel for complainant will accompany me to the shop of the Union Tool Company at Torrance, he will be afforded an opportunity to select such of said exhibits as he may desire.

Mr. BLAKESLEE.—The complainant offers in evidence, without refusing the offer of counsel to furnish further similar cutters, the spare cutter just referred to in counsel's stipulation, as Complainant's Exhibit Old Style Double Reamer Cutter No. 1.

(The said cutter so offered in evidence is marked "Complainant's Exhibit Old Style Double Reamer

(Deposition of Elihu C. Wilson.)

Cutter No. 1," together with the title of the court and cause, and the date upon which the said cutter was offered in evidence.) [109]

Mr. LYON.—So far as the body itself is concerned of what the witness has produced here and termed "body of new style" or "improved style Double reamer," whichever term he used, and bearing on its face the number 2435, the same objection will be made to the offering of this in evidence that has been made with reference to the body of the so-called old style reamer, that it is fragmentary. It has the general appearance of the reamer manufactured by the Union Tool Company, and while worn and battered in some respects, it is undoubted that this original body was manufactured by the defendant in this case prior to the commencement of this suit, and we will concede that this body in its original form was manufactured by the defendant in Los Angeles County, California, and sold by it prior to the commencement of this suit.

With respect to the cutters, whether said cutters belong to this particular body or not, I am unable to state. But, in a general way, they correspond to what would be sold with such underreamer and with the reservation that such a reamer out of our stock be selected by complainant or defendant to illustrate the exact structure of a complete underreamer as manufactured and sold by the defendant, I have no objection to this body and cutters except that without its sub and spring-actuated rod, etc., it is not a complete exhibit of the underreamer. And the fur-

(Deposition of Elihu C. Wilson.)

ther reservation that the cutters have evidently been redressed a number of times and may perhaps be very much worn on their various faces and parts. The further reservation that it is apparent that these cutters here produced are not a pare of cutters, although they may be cutters made at different times for the same size of body. I am willing to permit you to use these as cutters manufactured and sold by the defendant prior to the commencement of this suit, if you so wish, with the reservation that if I find such is not the fact I reserve the right to prove that these cutters were not made by us in Los Angeles [110] County, at the same time, to offer cutters which were made by us in their place and of the same general type.

Mr. BLAKESLEE.—The Complainant offers in evidence the body and cutters of the improved type of Double underreamer just covered by counsel's remarks and stipulation, as Complainant's Exhibit Improved Double Reamer and Cutters.

Mr. LYON.—The same objection is made to this offer that was made to the offer of Complainant's Exhibit Old Style Double Underreamer Body in evidence.

(The said body and cutters so offered in evidence are marked "Complainant's Exhibit Improved Double Reamer and Cutters," together with the title of the court and cause and the date upon which the same were offered in evidence.)

Q. 80. (By Mr. BLAKESLEE.) When did you first see a Double underreamer having a body like

(Deposition of Elihu C. Wilson.)

that of Complainant's Exhibit Old Style Double Reamer Body?

A. It was probably very near 1903, or it may have been as early as 1902.

Q. 81. When did you first see a Double underreamer with a body and cutters like that of complainant's Exhibit Improved Double Underreamer Body and Cutters?

A. I think it was during the year 1905. Probably 1905.

Q. 82. Since the time last mentioned, have you kept in touch with the underreamer products of the defendant, Union Tool Company, and its predecessor, as found in the market?

A. To a certain extent, yes, sir.

Q. 83. What have you to say as to the relative numbers of underreamers, the products of these companies, which you have seen since 1906, that is, the relation between the number of old-style Double underreamers and the improved Double underreamers?

A. The improved Double underreamer has almost entirely superseded the old style. [111]

Q. 84. And can you say of your own knowledge what has been the preference in the oil fields, if there has been any, since the year 1906, as between the old style and the improved Double underreamer?

Mr. LYON.—Objected to as leading and calling for a conclusion of the witness, incompetent, no foundation laid, and the witness is not qualified to answer the question.

(Deposition of Elihu C. Wilson.)

Q. 85. (By Mr. BLAKESLEE.) I will withdraw that question. Since the year 1906, have you kept in touch with the art of underreaming in the fields of California? A. Yes, sir.

Q. 86. To what extent?

A. To a very considerable extent. It has been my business to know what the trade demanded and whether it was being supplied.

Q. 87. Have you made any trips to the various fields in California during that period of time?

A. Yes, sir; many of them.

Q. 88. To what fields, for instance, and when?

A. The Coalinga fields repeatedly, Taft or Midway fields, the McKettrick field, the Sunset fields, the Kern River field, the fields between Coalinga and McKettrick, or the Devil's Den country, as it is usually known, the Salt Lake fields of Los Angeles, the Santa Maria field, the Santa Paula field, the Newhall field, the Whittier field and the Fullerton field.

Q. 89. How recently have you made trips to any of these fields, and which?

A. I have been in the Salt Lake field in the last week or ten days.

Q. 90. Any time last winter and a year ago this last winter?

A. Yes, sir; I have been in the Salt Lake fields several times during the last year, and I have been in the Taft field [112] and the Sunset field and Maricopa fields, and one trip, especially, was made during the winter of 1912-13.

(Deposition of Elihu C. Wilson.)

Q. 91. What was your mission on that visit last mentioned?

A. For the purpose of obtaining evidence in the suit of the Union Tool Company vs. The Wilson & Willard Manufacturing Company.

Q. 92. Now pending in this court?

A. Now pending in this court.

Q. 93. And what was the subject of that litigation?

A. The Union Tool Company had sued the Wilson & Willard Manufacturing Company for alleged infringement of the Double underreamer patent by the Wilson & Willard Manufacturing Company.

Q. 94. Is that the same company you have referred to in this deposition?

A. It is the same company.

Q. 95. And what class of apparatus did you particularly inspect in those fields at that time?

A. We were inspecting underreamers particularly.

Q. 96. And where was this?

A. That was in the Midway fields and in the Sunset and Maricopa fields.

Q. 97. And what did you find or which type of Double underreamer did you find to be in particular use in those fields?

A. The improved type or the new-style Double underreamer, as it is commonly known.

Q. 98. Now, you have testified that you turned out or had turned out the first Wilson underreamer in January or February, 1904. I wish you would state definitely whether prior to that time you ever

(Deposition of Elihu C. Wilson.)

had seen a Double underreamer of the improved type? A. I had not. [113]

Q. 99. Will you please now compare Complainant's Exhibit Old Style Double Reamer Cutter No. 1 with cutter Fig. 4, of Complainant's Exhibit Wilson Patent, and a cutter of Complainant's Exhibit Wilson Reamer?

A. You wish me to compare the old-style Double underreamer cutter No. 1 with cutter 4?

Q. 100. Yes. That is the number in the patent. And a cutter of Complainant's Exhibit Wilson Underreamer.

A. The old style Double underreamer cutter consisted essentially of a shank and dovetail shoulder on the sides of the shank of the cutter, and a body at the lower end of the shank, which body is virtually an extension or in a plane of the outer edges of the dovetails of the shank. In other words, practically the same width as the outer faces of the dovetail. The bearing face at the back of the cutter, which face rests against the spreading-bearing of the hollow slotted extension of the Double underreamer body, is so placed as to be at the back of the shank of the cutter, and no bearings extend on the back of the body of the cutter itself, as the back of the body of the cutter did not in any way contact with the reamer body itself. The Double underreamer cutter of the old-style type as shown by Complainant's Exhibit Old Style Double Reamer Cutter No. 1, differs from the cutters as revealed by complainant's patent in that the spreading bearings, or rather the bearings

(Deposition of Elihu C. Wilson.)

4³ of the Wilson underreamer-cutter, are a part of the cutter body and are integral with the cutter body and not a portion of the shank of the cutter, so to speak, whereas the corresponding bearings or the bearings of the Double underreamer-cutter, old style, which coact with the spreading-bearings in the old style Double underreamer body, were placed on the shank only of the cutter. The cutters shown in Complainant's Exhibit Wilson Underreamer are practically the same as those revealed by Complainant's [114] Exhibit Wilson underreamer patent, the bearing-faces being on the body or extended shoulders of the body instead of on the shanks of the cutter. The Double underreamer-cutter, old style, has a V-shaped groove planed across the shank of the cutter, which groove forms the upper boundary of the bearings just referred to in describing the old style Double underreamer-cutter. No such groove appears on the cutter of the Wilson underreamer, Complainant's Exhibit or Complainant's Patent.

Q. 101. Will you please now compare the cutters of Complainant's Exhibit Wilson Patent and of Complainant's Exhibit Wilson Underreamer with the cutters of Complainant's Exhibit Improved Double Reamer and Cutters?

A. The improved Double underreamer-cutter consists of a shank with dovetail shoulders on the back of the said shank, and the body of the cutter being partially an extension of the shank, and the said body having lateral extensions or projecting shoulders which extend at right angles to the shank

(Deposition of Elihu C. Wilson.)

and dovetails of the shank and project beyond the extreme outer faces of the dovetails. The improved Double underreamer-cutter has bearings on the inner faces of the shoulders of the body, which shoulders project at right angles to the shank and dovetails. This extended shoulder increases the width of the cutter body and the bearings at the back of the cutter which rests against the spreading-bearing of the Double underreamer body when the cutters

I. B. reaming

are expanded into ~~leaning~~ position and are extended across the entire back of the body of the cutter. In other words, the shoulders which project at right angles from the shank of the cutter and dovetails thereof have bearings on the inner faces of them, which bearing-faces coact with the spreading-bearing of the Double underreamer body. In this respect the improved Double underreamer-cutter differs from the old-style Double underreamer-cutter, and also in that respect the improved Double underreamer-cutter, is like the cutter of the Wilson underreamer.

[115]

Q. 102. Please compare the position or arrangement of the bearing-surfaces of the cutters of Complainant's Exhibit Double Improved Reamer and Cutters, with the position or arrangement of the bearing-surfaces of the cutter being Complainant's Exhibit Old Style Double Underreamer-cutter No. 1.

A. The old style Double Underreamer-cutter No. 1 was so constructed as to have all the bearing-face which coacts with the spreading-bearing of the

(Deposition of Elihu C. Wilson.)

Double underreamer body placed at the back of the shank and dovetail, and said bearing was in no respect a part of the body of the cutter, the bearing being above the body of the cutter. The corresponding bearing as shown by the improved Double underreamer-cutter was transferred further down the shank of the cutter and made to extend and to form the back of the extended shoulders of the cutter body.

Q. 103. Assuming that the cutters, Complainant's Exhibit Improved Double Underreamer and Cutters, were of a proper standard size to fit the body, being Complainant's Exhibit Old Style Double Reamer Body, would it be possible to apply such cutters to such body for use therewith?

Mr. LYON.—Objected to as leading.

A. No, sir; they would not fit the old-style body.

Q. 104. (By Mr. BLAKESLEE.) And why?

A. For the reason that the new style cutters having the bearing extended downward and forming the upper portion of the entire back of the cutter body, could not fit up into place in the old-style reamer body without removing the lower end of the dovetailed recesses in the old-style body to permit the extended shoulders ~~to permit~~ of the new-style

Double underreamer-cutter to ride up on to the spreading-bearing.

Q. 105. What provision is made, if any, to this end, in the body of Complainant's Exhibit Improved Double Reamer and Cutters? [116]

A. There is a V-shaped groove machined laterally across the end of the underreamer body, whereby the

(Deposition of Elihu C. Wilson.)

lower end of the dovetail recesses are removed, and which in turn forms a continuous bearing upon which the bearing at the back of the body of the cutters may rest. By these V-shaped grooves the parallel bearing faces of the hollow slotted extension of the reamer body are extended so as to accommodate the widened body of the improved Double underreamer cutter. Furthermore, the portion of the hollow slotted extension which projects downwardly below the upper corner of the V-shaped groove is thereby transformed into a projecting wedge or spreading-bearing, whereby the spreading surfaces of the improved Double underreamer body are extended downwardly until they are interposed between the bodies of the Double improved underreamer-cutters just as at the spreading-bearings Fig. 9 on the prongs of the Wilson underreamer body.

Q. 106. Please state what the co-operation of the cutters of Complainant's Exhibit Improved Double Underreamer and Cutters with the body of that exhibited will be with respect to the various stresses to which the cutters are subjected when the cutters are in expanded position and during the reaming operation?

A. The extended or broadened bearing-faces at the lower ends of the parallel bearing-faces of the improved Double underreamer body, projecting downwardly until they are interposed between the bodies of the two cutters, transfers the fulcrum or pivotal point to the backs of the bodies of the cutters. That pivotal point is the point at which the

(Deposition of Elihu C. Wilson.)

greatest stress is applied to the cutters in resisting
I. B. inward

the ~~underreamer~~ strain on the cutting edges of the cutters. The upward strain or the end-thrust is taken up at the upper ends of the dovetail ways which form the upper boundary of the hollow-slotted extension. The outward strains are taken up on the coacting dovetails of the underreamer cutters and the corresponding dovetails of the underreamer [117] body. The rotating strain applied to the cutters, which strain is caused by the principal force of the blow of the tools being applied at one side of the cutting edge of each of the cutters to a greater degree than happens to be applied to the opposite corner of the cutters, produces a rotating motion of the cutter within the dovetail, and which rotation is on an axis parallel to the axis of the reamer body. By the extended faces of the parallel bearing-faces of the Double underreamer body and the corresponding extensions of the cutter bodies forming shoulders which extend at right angles to the shank, this rotating strain is taken up on these shoulders at the backs of the cutters instead of on the dovetails only as was formerly done with the old style Double underreamer.

Q. 107. Now, what can you say as to the relative length of life and cutting efficiency or cutting range of the cutters of Complainant's Exhibit Improved Double Reamer and Cutters, with respect to the cutter being Complainant's Exhibit Old Style Double Reamer Cutter No. 1?

(Deposition of Elihu C. Wilson.)

A. I have previously explained that the improved Double underreamer-cutter having a wider body and a broader cutting surface naturally has more material in it which must be worn out before the cutter becomes useless, unless breakage should occur. The greater amount of material in the improved cutter is bound to prolong the life of the cutter to a greater degree than the narrow and small body of the old I. B. style Double underreamer cutter produced/in evidence/. In order to underream the whole sufficiently for the casting to follow, it was necessary for the underreamer-cutters to enlarge the entire circumference of the hole. It is apparent at once that the broader the cutters, or, in other words, the greater the extent of the cutting edges of the underreamer-cutters, the more of the circumference of the hole is reamed or cut at each stroke of the tools. The wider [118] cutter of course, reams the hole faster and, furthermore, reams the hole more completely than was accomplished by the old style narrow cutters of the Double underreamer.

(By consent an adjournment is taken until tomorrow, March 25, 1914, at 10 o'clock A. M., at this same place.)

Wednesday, March 25, 1914,
10 o'clock A. M.

This being the time and place to which the taking of proofs in this cause was continued, the proceedings are now resumed.

(Deposition of Elihu C. Wilson.)

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor for
Defendant.

Mr. BLAKESLEE.—Amplifying the notice for the taking of the testimony now in progress, which was originally given, it is to be noted that adjournments will be taken from time to time and from place to place as may be necessary to complete the proofs of complainant.

ELIHU C. WILSON, complainant herein, recalled as a witness in his own behalf.

Direct Examination (Resumed).

(By Mr. BLAKESLEE.)

Q. 108. With regard to the cutters of Complainant's Exhibit Improved Double Reamer and Cutters, as to which you have testified that the bodies project beyond the sides or lines of extension of the sides of the shanks of the cutters forming bearing surfaces, will you please state definitely where the other bearing surfaces on the body of these cutters as to which you have testified are located?

Mr. LYON.—The question is objected to on the ground [119] that it is leading.

A. The other bearing surfaces lie between those bearings which are on the backs of the shoulders of the cutter body and form a continuation of the bearings that are on the backs of the shoulders of the cutters.

Q. 109. (By Mr. BLAKESLEE.) Please state a little more fully what the actions of these several

(Deposition of Elihu C. Wilson.)

bearing surfaces are and what relation there is between or among them as to the operative effect produced?

A. The bearings practically unite to form one function of the underreamer-cutter. With the exception of a groove planed in the back of the cutter and which groove is a vertical one and in line with the axis of the cutter, the bearings referred to are a single plane.

Q. 110. Does the provision of this bearing surface between two bearing surfaces on the shoulders of these cutters affect the action of the bearing surfaces on the shoulders with respect to their opposing the stresses you have testified about?

A. That is somewhat difficult to say. I should imagine that the groove which is planed vertically across this bearing surface referred to, may possibly better assist in transferring the strains which are resisted by the bearings on the shoulders of the cutters, which strains are applied during the rotating action or strain or are sometimes applied to the cutter as previously explained. By having this part of the bearing removed there is a possibility that it would avoid a rocking or tilting action of the bearing and make a more substantial rest on the spreading-bearing of the reamer body.

Q. 111. Aside from any effect that groove may have, does the provision of the bearing surfaces which lie between the surfaces in the shoulders of each of these cutters affect in [120] any way the action of these bearing surfaces on the shoulders?

(Deposition of Elihu C. Wilson.)

Mr. LYON.—The question is objected to on the ground that it is leading.

A. They carry a part of the same strain that is applied to the shoulders.

Q. 112. (By Mr. BLAKESLEE.) Now, assuming that the intermediate bearing surface, that is, the bearing surface between the bearing surfaces on the shoulders, were removed in these cutters, please state what would be the result with respect to the action of the surfaces on the shoulders?

A. It would throw all of the strain upon the shoulders and would cease to transfer a portion of the wear and a portion of the strain of the inward thrust of the cutters to the intermediate bearings referred to.

Q. 113. Would the resultant action of the bearing surfaces on the shoulders differ in nature or in degree or in both?

Mr. LYON.—The question is objected to on the ground that it is leading and suggestive.

A. It would not differ in nature; it would differ in degree possibly. The bearings at the back of the shoulders of the cutters would be obliged to take up all of the pressure due to the inward strain.

Q. 114. (By Mr. BLAKESLEE.) Taking these bearing surfaces on the shoulders of these Double cutters of this exhibit by themselves, and comparing them with the bearing surfaces on the shoulders of the cutters of Complainant's Exhibit Wilson Underreamer, please more particularly compare the actions of the same.

(Deposition of Elihu C. Wilson.)

A. Their function is practically the same. The inward thrust of the cutter when in reaming position is taken up by the spreading-bearing that is interposed between the cutters, and this spreading-bearing, of course, comes in contact with those bearings at the apex of the shoulders of the cutters in both the Wilson [121] cutter and in the Double underreamer-cutters of the improved type. There is a difference in the angularity of these shoulders, but, so far as taking up the inward thrust is concerned, and maintaining the cutters in expanded position with the spreading-bearings of the reamer body interposed between them, their functions are the same.

Q. 115. And how with respect to the resistance by these bearing surfaces of the intrust stresses and the stresses tending to rotation of the cutters upon their longitudinal axes?

A. By the extension of the spreading-bearings of the back of the Double underreamer-cutter, I mean the change which was made in the improved Double underreamer-cutter over their old style cutter, whereby the body of the cutters were extended to from shoulders projecting at right angles to the shanks of the cutters. And by utilizing the backs of those shoulders as bearings to rest upon the spreading surfaces of the reamer body, the power to resist the rotating action of the cutters on their vertical axes was greatly increased. It gives an added leverage to the cutter to offset that rotation, and does more; it throws the principal part of this

(Deposition of Elihu C. Wilson.)

force or rotating strain upon these projecting shoulders with their bearings at their backs, instead of throwing the strain chiefly upon the dovetail shoulders of the shanks, as is the case with the old style Double underreamer-cutters. The Wilson underreamer-cutter had that same advantage over I.B. the old style/Double/underreamer-cutter, which made a stronger cutter than the old style Double underreamer-cutter, and, at the same time, made a wider or broader cutter, increasing the cutting area. The change which Double effected in devising the improved Double underreamer-cutter, now gives their improved Double underreamer-cutter practically the same advantage in that respect that we claim for the Wilson cutter. [122]

Q. 116. In the cutters of Complainant's Exhibit Wilson Underreamer, do you find any shoulder such as you have testified you find in the cutters of the Double underreamer at the back of the cutter or extending across the back of the cutter, which participates in the expanding action of the cutter?

Mr. LYON.—The question is objected to on the ground that it is leading.

A. Yes, sir; I do. The Wilson Underreamer-cutters, as previously explained, have shoulders which extend at right angles to the shanks, the backs of which shoulders are provided with bearings, which bearings rest upon the coacting spreading-bearing or bearings of the reamer body.

Q. 117. (By Mr. BLAKESLEE.) Do you find any shoulder part on the cutters of Complainant's

(Deposition of Elihu C. Wilson.)

Exhibit Wilson Underreamer between the shoulders you have just referred to?

Mr. LYON.—The question is objected to on the ground that it is leading.

A. No, sir; there are none.

Q. 118. (By Mr. BLAKESLEE.) Now, as to the groove which you have testified to finding in the cutters of Complainant's Exhibit Improved Double Reamer and Cutters, such groove extending lengthwise of the cutter, and being produced through the bearing surfaces, what effect does that have upon the continuity of the bearing surfaces of these cutters?

A. It divides the otherwise single plane into two separate bearings.

Q. 119. Do you find any such groove in the bearing surfaces of the cutter, being Complainant's Exhibit Old Style Double Reamer Cutter No. 1?

A. I do not.

Q. 120. Now, referring to both the old style and improved Double underreamers, as you are acquainted with the same [123] on the market and in the field, briefly state what means are employed for causing the expansion of the cutters in co-operation with the spreading surfaces?

Mr. LYON.— The question is objected to on the ground that it is immaterial in this action, inasmuch as complainant has elected to stand on Claims 16 and 17 of Complainant's Exhibit Wilson Patent, which said claims are specifically for an underreamer-cutter as an article of manufacture irrespec-

(Deposition of Elihu C. Wilson.)

tive of other parts of the underreamer. This objection will be understood as taken and repeated to all questions asked and answers given by this witness which refer to the parts of the reamer other than the cutters *per se*, and will also be understood as taken and repeated to each question asked and answer given by any other witness called on behalf of complainant in this case, without the necessity of hereafter repeating the objection in the record.

Mr. BLAKESLEE.—We object to counsel placing an arbitrary construction upon the specific claims which have been elected for the purpose of proving infringement in this case. And, if counsel insists, upon his objection to the determination of any other structural features of the Double reamers, we will ask him if he will at this time stipulate in the spirit of that objection that in the Double reamers of both old type and improved type means are provided and have at all times been provided for causing the expansion of the cutters in connection with the spreading surfaces when the reamers reached the zone of operation or work in the hole. If counsel will so stipulate we will not press that inquiry any farther.

Mr. LYON.—I am not trying this case on behalf of complainant. I stand upon the objection that in view of the election of complainant, so far as the question of infringement is concerned, the form and shape and construction of the cutters are the only things included within either claim 16 or claim 17 of the Wilson patent in suit. [124]

(Deposition of Elihu C. Wilson.)

Mr. BLAKESLEE.—The claims speak for themselves, taken in connection with the rest of the patent in suit. And we will now ask the witness to answer the last question.

A. The cutters are expanded by the upward movement of them produced by the tension of a spring, and which upward movement draws them upwardly over tapered faces of the hollow-slotted extension of the Double underreamer body, to such a position that the bearing surfaces on the backs of the shoulders of the Double underreamer-cutters rest upon the parallel bearing faces of the hollow-slotted extension of the reamer body.

Q. 121. (By Mr. BLAKESLEE.) And when bearing-faces of the cutters of the Double underreamers are in contact with the parallel faces of the hollow-slotted extension, are the lateral bearing-faces on the extended shoulders in the improved Double underreamer, as exemplified by Complainant's Exhibit Improved Double Reamer and Cutters, in contact with the parallel faces of the hollow-slotted extension?

Mr. LYON.—The question is objected to on the ground that it is leading.

A. They are.

Q. 122. (By Mr. BLAKESLEE.) When the cutters of the improved Double reamer are in expanded position, please compare the action of the bearing surfaces upon the lateral shoulders of the cutters of the improved Double underreamer with the action of the bearing surfaces upon the shoulders

(Deposition of Elihu C. Wilson.)

of the cutters of complainant's Exhibit Wilson Underreamer.

Mr. LYON.—The question is objected to as incompetent, irrelevant and immaterial to any of the issues in this case. The claims upon which complainant rests his claim of infringement being limited to the cutters or bits as an article of manufacture, and such claims cannot be in any manner limited by the device with which such article of manufacture is used or the manner of such [125] use, the claims not being combination claims but being claims of an article of manufacture.

Mr. BLAKESLEE.—The patent in suit is for an underreamer and we have been particular to reserve as to our charge of infringement the subjects of claim 16 and 17 read in connection with all of the other parts of the patent in suit. The patent is for a machine, in contradistinction to an article of manufacture, in accordance with the clear distinction made in the revised statutes, and we contend and shall contend that claims 16 and 17 are for parts of such machine to be considered in all of their operative relations and functions.

Mr. LYON.—I think counsel understands my objection and it is not proper or necessary to argue it at this stage.

A. When the cutters are fully expanded and up into reaming position, the action of those bearings at the backs of the shoulders of the Double Improved underreamer-cutter and those bearings at the back of the shoulders of the Wilson underreamer- cutters are

(Deposition of Elihu C. Wilson.)

precisely the same. Both resist the inward strain applied to the ends of the cutters, and both rest against the spreading-bearing of the reamer body. Both resist the rotating action of the cutters, which rotation is on a vertical axis, which axis is parallel with the axis of the reamer body, and both take up that rotating action, thereby relieving the dovetail of the cutters and corresponding dovetails or grooves of the reamer bodies of that rotating strain.

Q. 123. (By Mr. BLAKESLEE.) In both the old and improved types of the Double underreamers when the bearing faces upon the cutters move over the parallel sides of the hollow-slotted extensions, please state whether or not any expansion of the cutters is caused solely by this engagement of the spreading surfaces on the cutters with such parallel faces? A. There is not. [126]

Mr. BLAKESLEE.—Subject to further examination of the present witness if the Double reamers of both types which counsel has offered to produce are so produced and offered in evidence, this ends the direct examination of the witness, and counsel may inquire at this time if he wishes to.

Cross-examination.

(By Mr. LYON.)

Q. 124. Referring first, Mr. Wilson, to Complainant's Exhibit Old Style Double Reamer Cutter No. 1, looking at this cutter from the side, you find a V-shaped cut extending inwardly from the back of the shank of the cutter, do you? A. Yes, sir.

Q. 125. What is the purpose of this?

(Deposition of Elihu C. Wilson.)

A. The purpose of that V-shaped groove or cut is to permit the cutters to collapse over the hollow-slotted extension of the Double reamer body.

Q. 126. And what portion of such cutter forms the inclined shoulder which, contacting with the inclined lower end of the body of the Double reamer, causes the expansion of the cutter?

A. The wall of the groove which is nearest to the lower or cutting end of the cutter.

Q. 127. Now, referring to Complainant's Exhibit Improved Double Reamer and Cutters, and particularly to the two cutters which have been offered as a part of such exhibit, do you find in these cutters a similar groove to that you have just identified?

A. No, sir.

Q. 128. In what respect do they differ?

A. Do you mean does the cutter differ from the other?

Q. 129. No; the groove.

A. There is no groove there at all.

Q. 130. Is the back wall or the surface of the shank of [127] either of the two cuttres last referred to by me an unbroken surface extending parallel to the surface of the front of the shank of such cutter or cutters?

Mr. BLAKESLEE.—Objected to as indefinite. There are so many faces upon the cutter and it is not clear as to where the comparison is directed.

A. It does not extend parallel with the front of the cutter but it is in a straight plane across the entire

(Deposition of Elihu C. Wilson.)

back of the shank of the cutter except for the mortised hole at the back of the shank of the cutter.

Q. 131. (By Mr. LYON.) Please examine carefully the back of one of the said cutters and state if there is, commencing from the upper end of the shank of such cutter on the back or inside surface thereof, a plane surface extending to about one-third of the mortised opening or cutter key-way to which you have just referred?

A. I thought I was answering the question previous to this with reference to the Wilson underreamer-cutter.

Q. 132. I did not know what you were talking about when you spoke of grooves here. I have assumed you were discussing the cutter of Complainant's Exhibit Wilson Reamer.

Mr. BLAKESLEE.—Let him make his statement.

A. I understood that my previous answer referred to the Wilson underreamer-cutters. Now, do you want me to answer that other question?

Mr. BLAKESLEE.—Does the witness wish that statement to go as to the last answer or how far back in his testimony?

A. I want to go back in my testimony to where this question that I erroneously answered concluded, and I want that question re-read.

Mr. LYON.—The notary will read all the questions and all the answers given by the witness and let him indicate such change as he desires to make. [128]

(The notary reads the cross-examination of the witness down to and including the question No. 127,

(Deposition of Elihu C. Wilson.)

reading as follows: "Q. 127. Now, referring to Complainant's Exhibit Improved Double Reamer and Cutters, and particularly to the two cutters which have been offered as a part of such exhibit, do you find in these cutters a similar groove to that which you have just identified?" and the answer thereto: "A. No, sir.")

A. My answer to that is yes. And the subsequent answers are in error, and if you will repeat the questions I will reanswer the questions.

Q. 133. (By Mr. LYON.) In view of the witness having apparently answered these previous questions having in mind the Wilson underreamer-cutter under misapprehension as to the subject matter in question, I will now ask the witness to state what difference if any, he finds between this groove last identified by him in the cutters of Complainant's Exhibit Improved Double Reamer and Cutters and the groove in Complainant's Exhibit Old Style Double Reamer Cutter No. 1?

A. So far as the shape of the grooves is concerned, there is little or no difference. The grooves in the Double improved cutter are considerably closer to the body of the cutters than is the case in the old style cutter.

Q. 134. In the cutters of the so-called Improved Double underreamer the expansion surface is the inclined surface at the bottom of this groove? Is that correct? A. That is correct.

Q. 135. And in this respect such cutter corresponds with the old style Double cutter, does it?

(Deposition of Elihu C. Wilson.)

A. It does.

Q. 136. Referring to the so-called improved Double reamer as a whole, is it your understanding of such reamer that what you have termed the shoulders which you state have been [129] extended out at right angles to the shank of the cutter, perform any function in causing the expansion or collapsion of the cutters? A. Yes; they assist.

Q. 137. With what do such shoulders contact and cause either collapsion or expansion of the cutters?

Mr. BLAKESLEE.—It is to be noted that in this cross-examination counsel is treating of the co-operative portions of the reamer body, and such cross-examination is to be considered in connection with the remarks of counsel that the present issue concerns solely cutter construction.

A. The Double underreamer-cutters are expanded or contracted by a combination of means. One of those means is the inclined wall of the V-groove referred to coming in contact with the upwardly and outwardly inclined face at the extreme lower end of the hollow-slotted extension of the reamer body. The other means is the upwardly and inwardly inclined groove on the reamer body which form ways for the cutters. The collapsing of the cutters is produced by an outward motion of the cutters sliding on their spreading-bearings and during which course and while the bearings at the back of the shoulders of the cutters referred to are in contact with the parallel bearing surfaces of the hollow-slotted extension, the upper ends of the cutters tilt outwardly,

(Deposition of Elihu C. Wilson.)

sliding on the key to which they are attached. This produces a teetering action of the cutter which is the initial collapsing action of them. It will be clear that in order to produce this action it is necessary for these bearings at the backs of the shoulders of the improved Double cutter to be in contact with the face upon which the cutters teeter, and to that end these bearing faces on the backs of the shoulders of the Double underreamer-cutters assist in the collapsion of the cutter. The expansion of the Double underreamer-cutters is in a measure produced by the reverse of this action. [130]

Q. 138. (By Mr. LYON.) Have what you have termed the extended shoulders of the cutters of the so-called improved style Double underreamer any other part in the expansion or contraction than you have stated in your last answer?

A. I believe not.

Q. 139. How does this action which you have described as the action of the expansion and contraction of the cutters or bits of the so-called improved Double underreamer, differ, if at all, from the manner of expansion of the old style Double underreamer?

A. The difference is that with the improved style Double underreamer cutters the bearings at the back of the shoulders of the cutters, which shoulders extend at right angles to the shank, now share the function which in the old style Double underreamer-cutters was borne altogether by the bearing at the back of the shank of the old style cutter.

(Deposition of Elihu C. Wilson.)

Q. 140. When you use the term "bearing at the back of the shank in the old style cutter," you refer to that portion of the cutter lying below the V-shaped groove to which your attention has been called?

A. No, sir. I refer to only that portion of the cutter lying below the V-shaped groove which forms the bearing-face and which is above the body of the cutter and below the V-shaped groove.

Q. 141. How do you understand the spring-actuated rod on which the cutters are mounted in the old style Double reamer was turned down to collapse the bits and set the bits or cutters or entrance into the well-casing or hole?

Mr. BLAKESLEE.—Objected to as not cross-examination. The spring-actuated rod has not been referred to by the witness.

A. To begin with, the cutters are not mounted on the rod direct. They are attached to a key which extends through [131] the spring-actuated rod. The cutters of the old style Double underreamer were drawn downwardly or collapsed by means of a device somewhat resembling a pair of ice-tongs, you might say. They were attached to the cutters and in many instances the tongs were then tied to the derrick floor and an upward motion of the tools to which the reamer was suspended, which upward motion was produced either by the engine or by the operator turning over the bull-wheel drew the cutters downwardly over the spreading-bearings or, rather, drew the body upwardly until the spreading-bearing was

(Deposition of Elihu C. Wilson.)

partially removed from between the cutters, permitting them to collapse over the hollow-slotted extension.

Q. 142. (By Mr. LYON.) Referring to Complainant's Exhibit Old Style Double Reamer Body, there is a circular opening through the integral end of the reamer, is there? (Extending up to the central bore of the reamer body.) A. Yes, sir.

Q. 143. The spring-actuated rod plays in this circular opening, does it?

Mr. BLAKESLEE.—Objected to on the ground that it is not cross-examination.

A. It does.

Q. 144. (By Mr. LYON.) Is it a fact that such spring-actuated rods were provided with a threaded opening in their lower ends?

Mr. BLAKESLEE.—The same objection.

A. I cannot say definitely that they were. They may have been, although by recollection is that the old style cutters were collapsed as I have described above.

Q. 145. (By Mr. LYON.) Is it also a fact that with such old style reamers there was furnished a rod to screw into the end of such spring-actuated rod to draw down the spring-actuated rod and permit the setting of the bits or cutters? [132]

Mr. BLAKESLEE.—The same objection, and the witness has answered the question.

A. I could not testify as to that positively. I don't know. I don't remember.

Q. 146. (By Mr. LYON.) Is such a device pro-

(Deposition of Elihu C. Wilson.)

vided in connection with any of the Double reamers?

Mr. BLAKESLEE.—The same objection.

A. I believe that device is a part of the equipment of the improved style Double underreamer.

Q. 147. (By Mr. LYON.) And what is the purpose of such device?

A. That is one of the means employed in removing the cutters of the new style Double underreamer.

Q. 148. And in so removing such cutters such threaded rod which screws into the spring-actuated rod necessarily lies between the cutters, doesn't it?

Mr. BLAKESLEE.—Same objection.

A. It does.

Q. 149. (By Mr. LYON.) And it is necessary that the cutters be cut away slightly on their face (inner bearing face) to permit the cutters to sufficiently collapse?

Mr. BLAKESLEE.—The same objection, and the further objection that apparently counsel is attempting to testify himself in this matter.

A. I think the cutters of the improved Double underreamer are collapsed without the use of that groove at the back of them.

Q. 150. (By Mr. LYON.) Do you know anything whatever about the purpose of the making of such cut or groove in the bearing surface of the cutters of the Double improved underreamer? If so, please state.

I. B.

necessary

A. I don't see why that groove is ~~there~~ necessary for the purpose [133] of admitting that threaded rod or eye bolt.

(Deposition of Elihu C. Wilson.)

Q. 151. I will ask that the question be re-read to the witness and that he answer it yes or no directly. (The question is read by the notary.) I am asking for knowledge and not for conjecture.

A. I don't know.

Q. 152. Referring now to the cutter of Complainant's Exhibit Wilson Underreamer, how much above the lateral bearing face of the cutter itself does the shank of such cutter extend?

Mr. BLAKESLEE.—Objected to as calling for a matter of dimension, made manifest by an inspection of the cutters.

A. The flat length of the shank?

Q. 153. (By Mr. LYON.) What surface or surfaces in the Wilson underreamer cause the expansion of the cutters thereof?

A. The bearing surfaces on the backs of the shoulders of the body, which shoulders extend at right angles to the shank.

Q. 154. These surfaces are located at the sides of the lowermost portion of the shank of the cutter, are they?

A. They are located below and beyond the sides of the shank.

Q. 155. When you say "beyond" you mean laterally and at right angles to the shank, do you?

A. I do, yes.

Q. 156. Point out on this cutter and locate by verbal description the part which contacts with the inclined lower end 17 of the Wilson underreamer, as shown in the drawings of Complainant's Exhibit

(Deposition of Elihu C. Wilson.)

Wilson Patent, in expanding.

A. The upper corners of the two projecting shoulders of the body of the underreamer-cutter, which shoulders have bearings at their back.

Q. 157. Correspondingly, point out such part in the so-called Double improved cutter which contacts with the inclined end of the reamer body to cause such expansion, and verbally [134] describe it.

A. The corresponding point on the improved Double underreamer cutter, or, rather, the point which comes in contact with the extreme lower end and beveled faces thereof of the hollow-slotted extension of the Double underreamer body, is, as previously described, the lower wall of the V-shaped groove which is planed across the back of the cutter.

Q. 158. And that is true also of the so-called old style Double cutter, is it? A. It is.

Q. 159. What part in expanding the cutters of the device of Complainant's Exhibit Wilson Patent does that portion of the cutter play which lies between the expansion bearing faces 4³?

A. It does not contact with anything.

Q. 160. Has it any part in the expansion of such cutters? A. None whatever.

Q. 161. How much above the plane of the surfaces 4³ does such surface to which I have last called your attention in the Wilson underreamer-cutter lie?

Mr. BLAKESLEE.—Objected to as calling for a mere matter of dimensions best determined by actual inspection and measurement of the device, and also as indefinite in the use of the term "above."

(Deposition of Elihu C. Wilson.)

A. In the case of this $4\frac{1}{2}$ inch cutter, it varies, as it does in all the Wilson underreamer-cutters. That portion referred to is at an angle with the plane of the bearing surfaces at the back of the shoulders of the cutters.

Q. 162. (By Mr. LYON.) That angle projects that surface inward toward the center of the underreamer when the cutters are in position?

A. Do you refer to the angle at the—

Q. 163. The angle that you have just referred to.
[135]

A. And which lies between the bearing faces?

Q. 164. Yes.

Mr. BLAKESLEE.—Objected to as indefinite with respect to the surfaces on the underreamer or even the body of the reamer, as apparently there is no body portion intermediate of such surface.

A. When they are in reaming position?

Q. 165. (By Mr. LYON.) When they are in reaming position in any form whatever.

A. That only projects downward and outward when in reaming position, and when in contracted or collapsed position it is supposed to be practically parallel to the longitudinal axis of the reamer body.

Q. 166. And in both instances that surface so formed on such angle lies inward towards the center of the reamer body, as contrasted with respect to the bearing surfaces 4³?

A. It is the opposite angle from the bearing faces 4³.

Q. 167. And the surface is projected inward from

(Deposition of Elihu C. Wilson.)

such surfaces 4³; is that correct?

A. Yes, sir; upward and inward.

Q. 168. And what is it in the device shown in the drawings of the Complainant's Exhibit Wilson Patent, or the Exhibit Wilson Underreamer, which permits the use of such inwardly extending surface?

Mr. BLAKESLEE.—Objected to as indefinite and incomplete.

A. What is it that permits the use of it? Is that the question?

Q. 169. (By Mr. LYON.) That is it.

A. The surface has no use at all.

Q. 170. Has the metal which forms this surface no use whatever?

A. The metal has, but that particular face bears on nothing. [136]

Q. 171. What is it that prevents the use of this metal which forms this surface?

Mr. BLAKESLEE.—The same objection.

A. It is simply a part of the back of the cutter body and that portion of the cutter body which remains after forming the bearing surfaces 4³.

Q. 172. (By Mr. LYON.) Then these bearing surfaces 4³ are cut down from such metal?

A. Yes, sir.

Q. 173. Could a bit or cutter with such projecting metal in this form between such bearing surfaces 4³ be used in either Complainant's Exhibit Old Style Double Reamer body or the so-called improved Double reamer body, without material change therein?

A. Correspondingly the same material is in the

(Deposition of Elihu C. Wilson.)

Double underreamer-cutter of the improved style that exists in the Wilson underreamer-cutter. That portion of the material in the Wilson underreamer-cutter is made prominent by the angular bearings at the shoulder. The only difference is in the angularity of the bearings at the backs of the shoulders of the cutters.

Q. 174. Does such metal perform any function in the cutters of either the old style Double reamer or the so-called improved style Double reamer when in use in a Double reamer?

A. Yes, sir; it adds strength to the cutters of both styles.

Q. 175. Does it project beyond the plane of the thrust-bearing surfaces of the cutters of such Double reamers?

A. You refer to the inward thrust-bearing surfaces at the back of the cutters?

Q. 176. Yes.

A. No, sir; that metal is on a plane with those bearing surfaces, with the exception of that portion of it which is [137] made a vertical groove.

Q. 177. In the cutters of the Wilson underreamer this metal projects beyond the plane of these bearings 4³, does it?

A. Yes, sir; they project inwardly toward the center of the axis of the reamer body and beyond the bearings referred to.

Q. 178. Could such construction be utilized in either of the so-called Double old style or improved Double, without material change therein?

(Deposition of Elihu C. Wilson.)

A. So far as that particular material is concerned, it could be.

Q. 179. Please explain how.

A. By removing the portion of the metal from the backs of the shoulders of the cutter, lowering the bearing faces at the backs of the shoulders of the improved Double underreamer cutter.

Q. 180. You would not have to cut away any portion of the solid end of either the so-called old style or so-called improved style Double underreamer to utilize such inwardly projecting metal on the bits or cutters? A. No, sir.

Q. 181. You have stated in your direct examination that constructing the underreamer, in accordance with the drawings of the Complainant's Exhibit Wilson Patent permitted the use of more stock in the cutters, and, therefore, a longer life of the cutters. Please explain in what respect this is true.

A. By the design of the Wilson underreamer, having its spreading-bearings projecting downwardly and between the bodies proper of the cutters, the fulcrum or pivotal point on which the cutter tends to rock when crushing the lower ends toward each other, is transmitted down to the strongest part of the cutter. This permitted us to use a longer body on our cutters with safety. In other words, we could add more material to the cutting end of the cutters. This increased the length of the cutters. Adding to [138] the bulk of the cutter and also adding to the bulk by widening the cutters gives more metal which must be worn out before the cutter becomes useless,

(Deposition of Elihu C. Wilson.)

unless it be broken. With the old style Double underreamer cutter that pivotal point was not at the strongest part of the cutter but was up on the shank of the cutter, and to add to the length of the body of the cutter, increasing the material in it, increased the leverage on the cutter, which leverage is brought into play by the inward crushing action when the cutters are crowded towards each other when reaming in the hole, and the strain on the cutter by reason of the added length was such that the cutters would be broken at their weakest point, namely, through the shank. Furthermore, the old style Double underreamer cutter was very much narrower than the Wilson underreamer cutter, and the bulk in the cutter was consequently less.

Q. 182. Do you mean to state by your last answer that the proportionate length of the cutters to the body of the Double reamer has been made greater in the so-called improved Double underreamer than it was in the so-called old style Double underreamer?

A. The body of the cutter of the improved type Double underreamer cutter is longer than the body of the cutter of the old type.

Q. 183. What portion do you refer to in your last answer as the body?

A. The same portion we have always referred to in our description as to the body of the underreamer cutter.

Q. 184. Please state it.

A. It is that portion of the underreamer cutter which extends downwardly and is a continuation of

(Deposition of Elihu C. Wilson.)

the shank. It is the widest and largest part of the cutter.

Q. 185. Do you mean to testify that the proportionate length of the cutters over all in the so-called improved Double [139] reamers have been made longer than in the so-called old style Double reamer?

A. The old style Double underreamer-cutters had longer shanks than are the shanks of the new style Double underreamer-cutter. But their bodies were shorter. The bodies are the only portion of the cutter which is heated and dressed up to size repeatedly when in use, and is the only part of the cutter which actually performs the reaming or cutting, and, consequently, the length of the body is the important part to be considered in determining the life of the cutter.

Q. 186. Will you please point out to us the spreading surfaces of the reamer body of the old style Double underreamer?

A. The spreading surfaces consisted of the angular faces or downwardly and inwardly projecting faces of the hollow-slotted extension. Also, the upwardly and inwardly inclined faces or walls of the shoulders or retaining means of the body itself, which means co-act with the dovetail shoulders on the cutters.

Q. 187. Point out the corresponding surfaces in the Wilson underreamer, both in the exhibit in evidence and in Complainant's Exhibit Wilson Patent.

Mr. BLAKESLEE.—Objected to as indefinite and improperly assuming, in the use of the word “corresponding.”

(Deposition of Elihu C. Wilson.)

A. In one sense those features are not analogous. The only spreading means with which the Wilson underreamer body is provided are the downward and inwardly inclined faces at the extreme lower end of the prongs of the body, together with the downwardly and inwardly inclined bearing faces at opposite sides of the spreading-bearings of the two prongs, which spreading-bearings are below the dovetails or retaining means of the reamer body. There are no angular ways or dovetails or retaining means there appearing on the Wilson underreamer body which can in any way assist or co-operate with the other spreading means to expand or contract the Wilson underreamer cutters. [140]

Q. 188. In what sense are they analogous?

A. They are analogous merely in that they are spreading means or expanding means. Both underreamers are provided with such means. Other reamers in use long before the advent of either the Wilson underreamer or Double *or Double* improved underreamer have employed spreading means whereby the cutters were expanded or contracted. To that degree the spreading means of the Wilson underreamer and of the Double underreamer may be said to be analogous.

Q. 189. Would you then testify that the mode of operation or principle of action of the Double underreamer and the underreamer of Complainant's Exhibit Wilson Patent or the exhibit Wilson Underreamer in expanding the cutters or in contracting the cutters was the same or substantially the same

(Deposition of Elihu C. Wilson.)

or substantially different?

Mr. BLAKESLEE.—Objected to as calling for a sweeping conclusion on the part of the witness, involving even conclusions of law as well as of fact, and going further than the direct examination has prepared the way for, in that the present inquiry relates to definite parts and actions and co-operation.

A. I have previously testified that the mode of operation or the means by which an operator puts either of these underreamers into use is very much the same. The same could be said in comparing either of these reamers with underreamers of other makes and which preceded these reamrs. But the principals of action and the means employed within the reamer itself or their cutters, to produce this expansion and contraction, are decidedly different.

Q. 190. (By Mr. LYON.) Am I correct then in understanding your last answer that you consider such principles of action and the relation of the parts to each other to secure such action in expansion and contraction in the Double reamers and the Wilson [141] reamer of Complainant's Exhibit Wilson Patent or of the exhibit Wilson Reamer here in evidence, were radically different and distinct, one from the other?

Mr. BLAKESLEE.—Objected to as calling for the same sweeping conclusions, without relation to the definite matters and features constituting the proper examination of this witness.

A. There is a difference, but the difference is not nearly so marked in comparing the Wilson under-

(Deposition of Elihu C. Wilson.)

reamer with the new style Double underreamer. The new style Double underreamer has employed some of the means which were original with the Wilson underreamer.

Q. 191. (By Mr. LYON.) Please point out which one of these do at this time, and fully.

A. The Double underreamer, improved style, has transferred a portion of the bearing surface at the backs of the cutters down to the body of the cutter and extended the body of the cutter at right angles to the shank, forming the shoulder. These shoulders ride on bearings which the improved Double underreamer body is provided with and which was produced by cutting a V-shaped groove at the lower end of the dovetailed way of the body, thereby extending the parallel bearing faces of the hollow-slotted extension out through to the periphery of the body. These bearing shoulders on the cutters

I.B. extended

ride up on to this/~~extending~~ bearing
of

~~and~~/the reamer-body and contact with other spreading-bearings on the body during a portion of the expansion and contraction of the cutters. In that respect the improved Double underreamer employs the same means found in the Wilson underreamer.

Q. 192. Is the principle of action of the related devices in such improved Double underreamer *is* expansion and contraction the same or substantially the same as that of the Wilson underreamer?

Mr. BLAKESLEE.—The same objection, and the further [142] objection that it is indefinite.

(Deposition of Elihu C. Wilson.)

A. I have previously stated that there is a similarity.

Q. 193. (By Mr. LYON.) Do you consider them substantially the same in their mode of action and principle of action in expansion and contraction?

Mr. BLAKESLEE.—The same objection, and also on the ground that it has been substantially answered before.

A. I don't know that I can reply any fairer than by saying that there is a similarity produced by the change in design of the Double underreamer as employed by the improved type, and which similarity did not exist at all in the old type Double underreamer when compared with the Wilson.

Q. 194. (By Mr. LYON.) I will request that the question be re-read to the witness and that he answer it yes or no.

Mr. BLAKESLEE.—It is to be noted that the witness has pointed out the changes in the improved Double underreamer as over the old style Double underreamer, due to the incorporation of the features of the Wilson reamer, and has answered this question also before.

Mr. LYON.—The interruption by counsel is objected to as merely argumentative, and as a violation of the rules in equity which require objections to be stated without argument, and notice is given that if such argument is continued on the record the defendant will move for an assessment of costs against complainant.

(Deposition of Elihu C. Wilson.)

Mr. BLAKESLEE.—We will base the same objection previously made upon the remarks last put on the record, and incorporate them in the objection so that the objection may be fully and clearly understood for the benefit of counsel in his further questions. The equity rules require that the objection be definite so that it may be fully understood.

(The question is read by the notary.) [143]

A. I should state that in their mode of action and mode of operation or the means, aside from the features of the reamers themselves—

Mr. LYON.—Q. 195. (Interrupting.) The question is limited to the reamers themselves, and not to the manner of operation as an underreamer by operatives, but how the parts act together to assume expanded position or contracted position.

A. With that explanation the question is understood. I have always endeavored to differentiate between the mode of operation and the means or principles of operation. I think it is proper to make a distinction. If you refer purely to the devices themselves, I will say that the principles of action are different.

(By consent an adjournment is now taken until to-morrow, Thursday, March 26, 1914, at 10 o'clock A. M., at the same place.)

Thursday, March 26, 1914,
10 o'clock A.M.

This being the time and place to which the further taking of proofs was continued, proceedings are now resumed.

(Deposition of Elihu C. Wilson.)

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

ELIHU C. WILSON, complainant, recalled on his
own behalf:

Cross-examination (Resumed).

(By Mr. LYON.)

Q. 196. Your answer to questions Nos. 193, 194 and 195 state that the principles of action of the related devices in the Double improved underreamer in expansion and contraction of the bits, are different from the principles of action of the Wilson underreamer of Complainant's Exhibit Wilson Patent in expansion [144] and contraction of the bits, considering not merely the general manner or mode of use of the underreamer but the principles of the parts of the underreamer in effecting such expansion and contraction. But you did not state in such answers what degree of difference you find in such principles of action and the means of utilizing such principles of action. I therefore ask you again whether you consider these differences radical and effecting a utilization of different principles or merely a modification in the detail of the same principles of action.

Mr. BLAKESLEE.—Objected to as not cross-examination, in so far as the question concerns and contemplates anything further than cutter-structure and the structure of the parts of the reamers which co-operate with the cutters in expanding ac-

(Deposition of Elihu C. Wilson.)

tion. And further on the same ground heretofore urged, namely, that it calls for an arbitrary defining of degree and for a statement of sweeping conclusions without relation to definite matters and features constituting the proper examination of this witness. Furthermore, the witness has already exhaustively treated of the structures properly involved in this question, and of their functions and operative effects, and the question is apparently reaching after something beyond the scope of this inquiry.

A. The features employed by the Double improved underreamer, which features are parts of the body and cutters and not means or forces other than those which are parts of the cutters and body and which are used to expand and contract the cutters, are quite different from those employed by the Wilson underreamer. There is a decided similarity in the action of bracing the cutters and the means whereby the cutters are braced, whereby the Double improved underreamer resembles that of the Wilson underreamer, and which similarities did not exist in the old style Double underreamer.

Q. 197. (By Mr. LYON.) Please point out to us and describe [145] succinctly each one of the features "of bracing the cutters and means whereby the cutters are braced, whereby the Double improved underreamer resembles the Wilson underreamer, and which similarities did not exist in the old style Double underreamer," as referred to in your last preceding answer.

(Deposition of Elihu C. Wilson.)

A. The features I have in mind and by which the Double improved underreamer resembles the Wilson underreamer, are those which constitute the differences between the old style Double underreamer and the improved style Double underreamer. By widening the cutters of the old style Double underreamer, extending the bodies at right angles to the shanks, producing projecting shoulders on the bodies, and which project beyond the outside dimensions of the dovetails of the shanks, are a means so provided on the Double underreamer-cutter for bracing the cutter against one of the most trying strains to which the underreamer-cutter is subjected when in use. With the widened body of the underreamer-cutter it, of course, was necessary to provide a corresponding bearing on the body in order to utilize these added bearings at the backs of the cutters. To do so, the faces—parallel bearing faces—of the hollow-slotted extensions were extended at right angles to the axis of the reamer body by cutting a V-shaped groove out through the lower ends of the dovetails or retaining body, and clear through to the periphery of the body. These features did not exist in the old style Double underreamer-cutter nor body, and those are the features of our Wilson underreamer which we claim the improved Double underreamer infringes. Those very features were employed on the cutters and on the body of the Wilson underreamer from the beginning. The features added to the old style Double underreamer body and cutter, when constructing the improved style and

(Deposition of Elihu C. Wilson.)

which we claim infringe the Wilson underreamer patent, do not have so much to do with the expansion or contraction of the cutters as they do with other requisites of a [146] successful underreamer. Consequently, while the improved style Double underreamer does employ some of the same features and aids in expanding and contracting that are employed in the Wilson underreamer, such infringement is not of as great importance as the increased cutting surfaces of the cutters and the additional bracing and strengthening of the cutters wherein we claim the Double underreamer infringes the Wilson underreamer patent.

Q. 198. Is the principle of expansion and contraction of the cutters of the so-called Double underreamer and that of the so-called improved Double underreamer the same?

Mr. BLAKESLEE.—The same objection as heretofore urged.

A. I have stated before that there is a difference.

Q. 199. (By Mr. LYON.) Is that difference one of degree or are they substantially different so as to be independent principles in your opinion?

Mr. BLAKESLEE.—The same objection, and the further objection that it calls for a mere academic conclusion.

A. I should say it was one of degree.

Q. 200. (By Mr. LYON.) Is the principle of expansion and contraction of the Wilson underreamer of Complainant's Exhibit Wilson Patent or of Complainant's Exhibit Wilson Underreamer the

(Deposition of Elihu C. Wilson.)

same as that of the so-called old style Double underreamer?

Mr. BLAKESLEE.—The same objection, and the further objection that it is not cross-examination.

A. No, sir.

Q. 201. (By Mr. LYON.) Please explain in what that difference of principles consists.

Mr. BLAKESLEE.—The same objection.

A. The old style Double underreamer has for its spreading-means, which means are on the body, a hollow-slotted extension or stationary wall or partition, which stationary wall or partition lies between the dovetail grooves or retaining members. [147] which form ways for the cutters. The lower end of this hollow-slotted extension terminates in a V-shaped wedge. The faces of the hollow-slotted extension, except those of the extreme lower end, are parallel. In addition to those means the above-mentioned grooves or ways for the cutters are inclined downwardly and outwardly. The combination of these features just mentioned produce the expansion of the cutters. The cutter itself has a V-shaped groove planed across the back of the shank of the cutter. The bearing surface at the back of the cutter and which comes in contact with the bearing-surface of the hollow-slotted extension, namely, the parallel bearing-faces, lies just below this V-shaped groove and above the body of the cutter. In other words, it rests wholly upon the back of the shank of the cutter. The cutter is also provided with dovetail shoulders to engage in the angular

(Deposition of Elihu C. Wilson.)

grooves or dovetail ways on the body. The cutters are collapsed by drawing them downwardly until the bearing-faces at the backs of the cutters and below the V-shaped grooves go below the parallel bearing-faces of the hollow-slotted extension and to such a point that there is no material or metal of the hollow-slotted extension to hold them apart. Then they collapse by the V-shaped groove following inwardly until the inner walls of same are virtually parallel with the walls of the hollow-slotted extension. In addition to the collapsing caused by the cutter closing over the extreme lower end of the hollow-slotted extension, another and independent means of collapsing the cutter exists or takes place, due to the cutter following the downwardly and outwardly inclined faces of the dovetail ways in the body. The expansion of the cutters is produced by the reverse of this action, whereby the cutters are drawn upwardly over the spreading-bearings and following the upwardly and inwardly inclined groove on the reamer body, and tilts the cutters inwardly at their upper ends, which, of course, pries the cutting edges of the cutters outwardly as they [148] tilt or teeter over the bearings of the parallel bearing-faces.

The means employed by the Wilson underreamer to expand or contract the cutters are very different, in that we do not employ upwardly and inwardly-inclined grooved or dovetailed ways. Such grooves or dovetailed ways are displaced entirely, and we use parallel shoulders extending vertically and at

(Deposition of Elihu C. Wilson.)

opposite sides of the body, and which shoulders are parallel to each other. By being parallel, of course any possibility of tilting the cutter inwardly as it is drawn up, or allowing the possibility of tilting the upper end of the shank of the cutter inwardly as it follows the dovetailed shoulders, or the possibility of the upper ends of shanks of the cutters tilting outwardly as they are drawn down, is entirely obviated. The only expansion or contraction means used or employed by the Wilson underreamer are those which form the extreme lower projections of the two prongs of the reamer body, which projections extend downwardly below the lower end of the dovetailed shoulders, which shoulders exist on the inner walls of the two prongs. These downward projections have bearing-faces at opposite sides, which bearing-faces are tapered and which project downwardly and inwardly. The extreme lower end or faces of these projections form a more radical angle tapering downwardly and inwardly, forming a V-shaped wedge. The cutters are provided with shoulders which project at right angles to the shanks of the cutters, such shoulders having bearings on their inner faces and are made to coact with the two separate and distinct spreading-bearings mentioned, namely, the V-shaped wedge end of the lower ends of the prongs, and the tapering bearing-faces at the sides of the prongs. The cutters are collapsed by drawing them downwardly, and as their bearing-faces are angular, the cutters are permitted to collapse at once on their initial downward movement

(Deposition of Elihu C. Wilson.)

by following the downwardly and inwardly-inclined bearing-faces. As soon as the bearing shoulders on the cutters reach the lower [149] end of the bearing-faces of the prongs and drop over the upper corners of the V-shaped end, the collapse is more sudden from that period on and a very short downward stroke permits them to collapse completely. Their expansion is produced by the reverse action, whereby the cutters are drawn upwardly over the V-shaped end and up on to the angular bearing-faces at the lower ends of the prongs. The upper ends of the cutters, that part coming in contact with the suspension-means, merely pivot or swing from the suspension-means, whereas with the Double underreamer in order for the upper ends of the cutters to follow the angular dovetailed grooves of the body it is necessary for them to slide outwardly on the key or suspension-means as they are being collapsed, and to slide inwardly on this key or suspension-means while they are being expanded. Such an action does not take place with the Wilson underreamer-cutters.

Q. 202. (By Mr. LYON.) Would it be a correct summary of your last answer and of your testimony in regard to the subject of the last preceding question, to state that you consider the principles of operation and coaction of the bits and body portion of the said reamers in expansion and contraction to be radically and mechanically different?

Mr. BLAKESLEE.—We object to counsel testifying without being sworn. The answer of the witness speaks for itself and counsel can summarize it

(Deposition of Elihu C. Wilson.)

in argument as he wishes. If counsel wishes him to testify further in answer to the previous question, let him ask him to do so.

A. The principles of expansion and contraction as employed by the old style Double underreamer and the Wilson underreamer are radically and mechanically different.

Q. 203. (By Mr. LYON.) Do you consider that the extension, as you have termed it, of the thrust-bearings laterally on what you have termed the hollow-slotted extension or end portion of the [150] Double underreamer is utilized to employ the same principles of action in expansion and contraction of the cutters that are employed in the Wilson underreamer?

Mr. BLAKESLEE.—Objected to as calling for a mere conclusion and not calling for those definite statements which it is believed the witness has already several times made as to the action of the several parts in co-operation, and is therefore merely repetitious.

A. I think I have testified previously that in so far as the bearings at the backs of the extended shoulders of the improved Double underreamer rest upon and bear upon a bearing provided on the improved Double underreamer body during a portion of its expansion or contraction of the cutters, is similar to the same action and same principles of expansion and contraction used by the Wilson underreamer.

Q. 204. (By Mr. LYON.) Please, now defi-

(Deposition of Elihu C. Wilson.)

nitely point out and describe that portion of the principle of expansion of the Wilson underreamer to which you refer in your last answer.

A. In order for the Wilson underreamer-cutter to be expanded or contracted, it is necessary for the bearings at the backs of the shoulders to be in contact with the spreading-bearings on the reamer body. The same can be said of the improved Double underreamer.

Q. 205. That is the extent of the similarity to which you have referred?

A. Yes, sir; that is the extent.

Q. 206. In the cutter or bit of the old style Double reamer, so-called, with reference to the longitudinal extension of such bit, including the body and shank, the dovetail ribs or shoulders on such bit extend in a straight line parallel to the longitudinal axis of such bit? [151]

Mr. BLAKESLEE.—Objected to as indefinite what surfaces are contemplated in this question.

A. Do you mean to ask whether the sides of the cutter are parallel and in a plane with the extreme outside dimensions of the dovetails?

Q. 207. (By Mr. LYON.) No. If the general direction of the dovetails is straight with the axis or longitudinal extension of the bit.

Mr. BLAKESLEE.—The same objection.

A. In other words, whether the dovetail shoulders on same are parallel with the back of the cutter?

Q. 208. (By Mr. LYON.) Or in a straight line with a straight action, or are they arranged at an

(Deposition of Elihu C. Wilson.)

angle so as to coincide and conform to the inclination of the dovetails in the body of the Double underreamer and co-operate therewith in the tilting action of the cutters, as explained by you?

A. They are at an angle and are made to conform to the downwardly and outwardly projecting grooves or dovetailed ways of the reamer body.

Q. 209. And the purpose of this angle of the dovetails of the cutters is to coact with the inclination of the dovetailed ways for the purpose of assisting the tilting action in the Double underreamer. Is that correct?

A. The dovetailed shoulders on the cutters are formed at that angle for the purpose of coacting with the dovetailed groove or retaining way on the reamer body while the cutter is in expanded position and while it is in operation.

Q. 210. That is true. But my question is, is the formation of these dovetails on the cutters of the Double underreamer also for the purpose of co-operating with the inclination of the dovetailed ways on the body of the Double underreamer to effect a portion of the expansion and contraction of the bits in the manner to which you have referred? [152]

A. No, sir; the angularity of the shoulders on the cutters does not assist in expanding or contracting the cutters, but the angularity of the dovetailed way on the body does so assist.

Q. 211. Comparing the dovetails of the Double cutter, either old style Double reamer-cutter or improved style Double reamer-cutter, with the dove-

(Deposition of Elihu C. Wilson.)

tails on the side of the Wilson cutter, as exemplified in Complainant's Exhibit Wilson Underreamer, do you find these dovetails to be the same?

A. No, sir; they are not the same.

Q. 212. What is their difference?

A. The dovetails of the Wilson underreamer-cutter are of uniform thickness, measuring from the back of the cutter outwardly, and are parallel to the back of the cutter. The inner face of them is I. B. parallel

practically to the back of the cutter. The inner face of the dovetail of the Double underreamer-cutter is not of uniform thickness, and the inner face of the dovetail shoulder is not parallel to the back of the cutter.

Q. 213. Is this difference which you have last pointed out in the dovetails of the Wilson underreamer-cutter and of the Double underreamer-cutters necessary to the difference in principles of action in expansion and contraction to which you have called our attention?

A. Yes, sir; they are necessary.

Q. 214. In what manner and how?

Mr. BLAKESLEE.—Objected as *as* merely repetitious. The witness has testified how these co-operating dovetails or cutter and body portions operate in expansion and contraction in both the Wilson and Double reamers, and he has so testified within the last thirty minutes.

A. The Wilson underreamer-cutter is so formed and the dovetails are thrown so far back toward the

(Deposition of Elihu C. Wilson.)

center of the body when the cutters are in place that if we changed the angularity [153] of the backs of the cutters, increasing the thickness inwardly or at the backs of the cutter-shanks, they would not collapse together to the degree that is necessary and, therefore, the design and proportions of the Wilson underreamer body just about enables us to use that much stock at the backs of the cutters and no more. When the cutter is expanded to full reaming position, it is necessary to have the entire face of the dovetails coact with the dovetailed shoulders on the inner walls in order to brace the cutter to the fullest degree. Therefore the dovetails of the cutter are proportioned and shaped as they are. With the Double underreamer the action is different. The cutter follows in a beveled groove or an angular groove. The groove is larger at the bottom than it is at the top, and the backs of the cutters have to be cut out in order for the cutter to collapse over the spreading end, and consequently that difference exists there in that feature when compared with the Wilson underreamer, for the reason that this groove at the back of the cutter changes the angularity, making the back of the cutter out of parallel with the front face of the dovetailed shoulders of the cutters.

Q. 215. (By Mr. LYON.) As you understand the Double underreamer, either the so-called old style or so-called improved style, could the dovetailed ways on the body of such reamer and the dovetails on the bits of such underreamer, be made straight as in Wilson underreamer cutters, without changing mate-

(Deposition of Elihu C. Wilson.)

rially the principles of action of such parts or the mode of co-operation of such parts in the reamer?

A. If the dovetailed groove or dovetailed ways in the body of the Double underreamer, either the new style or the old style, were straight and parallel to the axis of the reamer body, and the dovetail cutters on the shoulders or shanks of the cutters were made to fit them, the cutters would not expand nor contract. [154]

Q. 216. As I understand your last answer, you mean that such modification as I have last suggested would be impossible with the Double underreamer either of the old style or the new style.

A. The changes I have outlined would simply make the cutter inoperative. They would simply travel in the grooves or dovetailed ways, and would not expand or contract.

Q. 217. You have produced here only cutters alleged to have been manufactured by the Union Oil Tool Company or the Union Tool Company, of either the old style, so called, Double underreamer or improved Double underreamer, and cutters of the Wilson underreamer manufactured either by yourself or the Wilson & Willard Manufacturing Company for you. Do you claim that the Union Tool Company has made or sold any cutters for the Wilson underreamer? A. I do not.

Q. 218. And your claim of infringement in this cause rests solely upon the cutters manufactured by the Union Tool Company for its so-called improved Double underreamer? Is that correct?

(Deposition of Elihu C. Wilson.)

A. No, sir.

Q. 219. Wherein is it incorrect?

A. We claim that they are infringing our original claim. We claim that you are infringing both in the body and in the cutters.

Q. 220. But solely by the so-called improved Double underreamer?

A. Yes, sir; by the so-called improved Double underreamer.

Q. 221. In the so-called improved Double underreamer will it in any manner affect the principle of expansion or contraction of the bits or cutters if what you have termed the [155] laterally extended shoulders of the cutters were planed off from the cutters?

Mr. BLAKESLEE.—Objected to as repetitious. The witness has testified how these projections participate and to what extent they participate in the action of the cutters.

A. By removing that feature of the improved Double underreamer cutter, namely, to transform the cutter back to its old form, with the exception of still allowing a portion of the spreading-bearing face at the back of the body of the cutter, the cutters would expand and would contract. It would have the advantage of the bracing action which we claim for the Wilson under-reamer cutter to a certain degree, for the reason that the fulcrum would still be across the body, instead of across the shank, as was the case with the old style Double underreamer-cutter.

(The question is read by the notary.)

(Deposition of Elihu C. Wilson.)

Mr. LYON.—Let the record note that the question is reread to the witness and he is requested to answer it yes or no.

A. So far as the mere act of expanding and contracting, the cutters would still have that same action.

Q. 222. Then the principles of contraction and expansion of the cutters in the old style Double reamer and in the improved Double reamer are the same, are they?

A. No, sir; I have explained before that they are different. I do not say that they would expand in the same manner. I say that the cutters would expand by making the change you suggest.

Q. 223. What is the difference, if any, in the manner of expansion, then, in that regard?

Mr. BLAKESLEE.—Objected to as mere repetition. The witness has testified fully as to the manner of expansion of the cutters of the improved Double reamer, and treated in such discussion fully the features of alteration in those cutters with respect to the cutters of the old style Double reamer.
[156]

A. The fulcrum point, or point against which the back of the cutter rests during part of its expansion or contraction, is transferred downwardly in the new style Double underreamer-cutter even with the change that you suggest of planing off the shoulders at the sides of the cutter until the fulcrum is across the body of the cutter instead of across the shank of the cutter. The teetering action is extended further down the cutter than is the case with the old style.

(Deposition of Elihu C. Wilson.)

Q. 224. (By Mr. LYON.) And this is due to what?

A. Due to the change in the design of the cutter.

Q. 225. Please point out such feature of each design to which you last refer, and describe it particularly, so that we may not hereafter fall into any error as to what you exactly mean.

A. I do not believe I am in error. The shape of the two cutters is apparent, and when you look at the backs of them it is apparent even to a novice in mechanics that the bearing-faces of the old style Double underreamer-cutter are immediately back of the shanks of the cutters and do not, project downwardly to such a point as to place them back of the body of the cutter. Now, with the new style Double reamer-cutter, or the improved type, this bearing-face is carried downwardly until the extreme back of the body of the cutter forms a portion of that bearing.

Q. 226. How much is carried down? To what degree?

Mr. BLAKESLEE.—Objected to as calling for a determination of dimensions best arrived at by computing to scale.

A. In the case of the improved style of cutter which we have at hand, it appears that about half of the vertical dimensions of the bearing is on the body and about half of it is on the shank.

Q. 227. (By Mr. LYON.) And in this so-called improved style where is the shoulder located which contracts with the inclined shoulder at the bottom of

(Deposition of Elihu C. Wilson.)

the Double reamer body to tilt the cutter outward in expanding? [157]

A. That shoulder forms the lower wall or bound-
I. B. groove
ary of the V-shaped ~~cutter~~ which is planed
across the shank of the cutter.

Q. 228. Is such groove proportionally lower than in the old style Double cutters?

Mr. BLAKESLEE.—Objected to as indefinite, as the question inquires as to whether it is lower or is not lower.

A. Yes, sir; that groove is very much closer to the body of the new style Double underreamer than was the case in the old style.

Q. 229. (By Mr. LYON.) Please explain a little more exactly what you mean when you state that in the Double improved cutter the fulcrum is on the body instead of across the shank.

A. When the cutter of the Double underreamer begins its initial downward movement, when in the act of collapsing the cutter, the pressure against the pipe or shoe, by which force the cutter is crowded downwardly, tends to crowd the lower or cutting ends of the cutters towards each other. As the cutter moves downwardly in its angular dovetailed grooves, the bearing-ends of the shanks of the cutters are tilted outwardly and is, of course, the opposite motion of the inward action of the lower end of the cutter. In other words, the cutters teeter over their spreading-bearings. The point of contact between the cutter and the spreading-bearings is thus trans-

(Deposition of Elihu C. Wilson.)

ferred to the extreme lower edge of the bearing at the back of the cutters, and this extreme lower edge is wholly across the body of the cutter. All of the bearing-face at the back of the cutter, both on the shanks and on the body, is out of contact with the expanding bearings or the parallel bearings of the hollow-slotted extension, with the exception, as previously mentioned, of the extreme lower edge of that bearing. At the extreme lower edge of the bearing, and which bearing extends across the body, and in the case of the improved Double underreamer-cutter forms the fulcrum or teetering point of the cutter.

[158]

Q. 230. Isn't that the same teetering or tilting action that was present in the old style Double underreamer, so-called, except that the position of the bearing surfaces has been arranged nearer the lower end of the cutter?

A. The same teetering action did exist, but the position of the fulcrum was altogether different in the old style Double underreamer cutter from its position in the new style or improved Double underreamer cutter.

Q. 231. Now, please answer the question. (The question is read by the notary.)

Mr. BLAKESLEE.—Now, read the answer. (The notary reads the witness' answer.)

A. I think my former answer replies to the question.

Q. 232. (By Mr. LYON.) Then your former answer is that there is a material difference?

(Deposition of Elihu C. Wilson.)

Mr. BLAKESLEE.—The answer is on the record, and if further answer is requested let it be called for.

Mr. LYON.—We submit that we are entitled to a direct and positive statement and are not required to rest upon the implication or inference of the answer. If the witness considers that these two things are substantially different, he can answer the question yes or no and so state positively.

Mr. BLAKESLEE.—He has pointed out the difference.

Mr. LYON.—But he has not answered the question positively.

A. Read my answer again. (The notary reads the witness' answer.)

A. Yes. The teetering action does not exist in both cases. The position of the fulcrum in the improved style Double underreamer-cutter is moved further down towards the cutting edge of the cutter, changing its position altogether from that of the old style Double underreamer-cutter.

(By consent an adjournment was taken until 2 o'clock P. M.) [159]

Thursday, March 27, 1914,
2 o'clock P. M.

This being the time and place to which the further taking of proofs was continued, proceedings are now resumed.

ELIHU C. WILSON, complainant, called as a witness in his own behalf.

(Deposition of Elihu C. Wilson.)

Cross-examination (Resumed).

(By Mr. LYON.)

Q. 233. And such tilting action, over what you have termed the fulcrum on the body in place of across the shank of the cutter in the new style or improved Double underreamer and cutter, would be present if the laterally extended shoulders of the cutters, which you have termed the lateral extension of the bearing-surface of such cutters, were planed off of said cutters, would it?

A. The tilting action would be present, but it would be on a different part of the cutter.

Q. 234. On what part of the cutter would it be in such case?

A. It would be wholly upon the— No. Let me hear that question again. (The question is read by the notary.) No. The last part of that answer is wrong. It would be across the back of what remains of the cutter body after removing the extended shoulders.

Q. 235. And it would be the same tilting action, would it not?

A. It would be the same tilting action.

Q. 236. Then whether or not the inward thrust-bearing of the cutters of the Double improved reamer are extended laterally beyond the width of the shank of the cutter, has no effect whatever upon the presence or absence or the location, longitudinally of the cutter, of such tilting action, has it? [160]

A. The tilting action would be there, but the fulcrum would be shifted.

(Deposition of Elihu C. Wilson.)

Q. 237. How would the fulcrum be shifted?

A. No. I am wrong. The tilting action would be there, but the strain would be confined to a smaller volume of metal than previously, on the improved Double underreamer-cutter.

Q. 238. You stated this morning that the old style Double underreamer has for its spreading-means, which means are on the body and hollow-slotted extension or stationary wall or partition, which stationary wall or partition lies between the dovetail grooves or retaining members, which form ways for the cutters. That is true, and in the same sense with respect to the so-called improved Double underreamer, is it?

A. In the improved Double underreamer body that portion of the body known as the hollow-slotted extension, and which portion lies between the dovetail grooves of the body, forms only a portion of the expansion means or bearings.

Q. 239. When you speak of the "expansion means" in your last answer, you refer to the two inclined surfaces at the end of the body of the reamer, do you?

A. Yes; and also that part which extends laterally from the hollow-slotted extension to the periphery of the body.

Q. 240. Upon which the tilting action, to which we have just been referring, takes place? Is that it?

Mr. BLAKESLEE.—Objected to as indefinite which part of the structure is meant.

A. The tilting takes place on the improved Double

(Deposition of Elihu C. Wilson.)

underreamer body the full width of the body of the cutter, and that means that the extended bearings which are formed by the V-shaped grooves at the lower end of the reamer body also form a portion of the fulcrum or pivotal point.

Q. 241. (By Mr. LYON.)—The other portion of such fulcrum [161] or pivotal point, as you call it, is formed by the metal which lies directly within the open side slots and dovetailed ways of the body? Is that correct?

A. That forms another part of the spreading-bearings; yes, sir.

Q. 242. And so far as this tilting action is concerned, and in this question I am referring to such tilting action solely, the improved Double underreamer body in this respect simply contains a wider bearing on which this tilting action may take place? Is that correct?

A. The wider or extended bearing serves more purposes than the tilting action or fulcrum point of the cutters.

Q. 243. Will you please now answer the previous question yes or no.

Mr. BLAKESLEE.—Reread the question. (The notary reads the question, No. 242.)

A. That is correct with respect to the tilting action only, yes, sir.

(By request of counsel the answer of the witness to question No. 242 is read.)

Q. 244. (By Mr. LYON.) What other purposes does that wider bearing serve in the Double im-

(Deposition of Elihu C. Wilson.)

proved reamer, so called?

Mr. BLAKESLEE.—Objected to as mere repetition of the previous testimony several times given.

A. I have repeatedly stated that by the V-shaped grooves at the sides of the reamer-body which extends the face of the parallel bearing-faces of the hollow-slotted extension longitudinally out through the periphery of the reamer body, the projection of the reamer body is formed, which extends downwardly to form bearings which appear at the backs of the cutters of the improved Double underreamer. This forms a broader bearing, giving more surface, and an extended bearing which better braces [162] the cutters against the rotation action within the dovetail means and on an axis of a vertical line through the cutters, and also transfers the fulcrum or pivotal point on which the cutter teeters when collapsing, from the shank of the cutter to the body of the cutter, thereby overcoming one of the weaknesses of the old style Double underreamer cutters. It enables the use of broader cutters and it enables the use of a greater bulk of material in the cutters, producing longer life of cutters and greater strength.

Q. 245. (By Mr. LYON.) This morning you testified that in the old styled, so called, Double underreamer, the lower end of the hollow-slotted extension terminated in a V-shaped wedge, the faces of the hollow-slotted extension, except those at the extreme lower end, being parallel. That is true also of the so-called improved or new style Double underreamer, is it not? A. Yes, sir.

(Deposition of Elihu C. Wilson.)

Q. 246. And in the same answer you stated that in such old style Double underreamer, in addition to the means before referred to, the above mentioned grooves or ways for the cutters are inclined downwardly and outwardly. That is to say, the dove-tail grooves or retaining ways of the cutters. And you also said that the combination of the features just mentioned produced the expansion of the cutters. Those features are present and in the same relation in the so-called improved or new style Double underreamer, are they?

A. They are present, but the action occurs in a different ratio or different degree, one compared with the other.

Q. 247. How much difference in degree is there?

A. I don't know. It is a difficult matter to figure. You could probably lay it out on a drawing board and determine.

Q. 248. The principle of action of the parts is the same in the two reamers? [163]

A. The principles of expansion are not altogether the same.

Q. 249. Explain each and every difference that you think there exists in that regard between the so-called old style Double reamer and the so-called improved Double reamer.

A. That question has been answered by exactly the same reply that I would try to give again.

Q. 250. Please state it again so that we may have it directly before us.

Mr. BLAKESLEE.—We object to amplifying the

(Deposition of Elihu C. Wilson.)

record by placing upon it answers which cannot be different from those previously given. The whole record is before us as fast as it can be reduced by machine impressions, and I cannot see the advantage of getting it before us at every session identically as taken at a previous session. This has been gone into exhaustively before—this same matter.

A. I have repeatedly explained that with the old style Double underreamer there was no means provided below the dovetails, or upwardly and inwardly inclined grooves or dovetailed ways, to form bearings between the bodies of the cutters; nor was there any means provided for a bearing laterally or beyond the space bounded by the inner walls of the dovetailed ways of the body. The pivoting or fulcrum point was confined between the walls of the two dovetailed ways on either side of the body of the old style Double underreamer. The corresponding bearing-faces on the cutters, and which coact with the spreading-bearings of the old style Double underreamer, were located at the backs of the shanks of the cutters. The pivotal point at the backs of the shanks of the cutters was at the extreme lower end of this bearing referred to and which formed no part of the cutter body itself. I have endeavored to explain repeatedly that when the cutters of the Double underreamer, both old style and new style, [164] have finally ridden up to the extreme faces of the V-shaped wedge at the bottom of the body, and rest on the parallel bearing-faces of the hollow-slotted extension, there is still a contracting or an expand-

(Deposition of Elihu C. Wilson.)

ing motion of the cutter, depending on the upward or downward movement of the same, over the spreading-bearing, due to the angular dovetail grooves on the body, and the cutter following them. Now, with the improved style Double under-reamer the lateral bearings or extensions of the faces of the hollow-slotted extension, coact with the corresponding bearings on the backs of the body of the cutters of the improved style Double underreamer. Therefore, the entire bearing-face formed not only by the extension or projection of the hollow-slotted extension and by the V-shaped groove comes in contact with the corresponding bearings at the back of the cutters, and all of that bearing plays a part when the cutters expand or contract. With the old style Double underreamer this cannot be said, for the reason there are no V-shaped grooves in that style of reamer, no lateral extensions of the parallel bearing-faces of the hollow-slotted extension, no corresponding bearings on the projecting shoulders of the cutter, and consequently the action is different.

Q. 251. (By Mr. LYON.) Is it your understanding of the so-called improved Double under-reamer that the V-shaped grooves formed at the bottom of the body portion play a part in the expansion or contraction of the bits?

A. The V-shaped grooves themselves are only a means to produce this projected bearing or extension of the hollow-slotted body, which projection extends downward, to contact with the cutters below

(Deposition of Elihu C. Wilson.)

the shanks of the cutters. The groove itself is merely the result of that form of construction and, so far the groove itself is concerned, it might be V-shaped or be at right angles. [165]

Q. 252. In your last answer you have stated that in both the so-called old style and so-called improved or new style Double reamer, that after the cutters of the Double underreamer, both old style and new style, have finally ridden up to the extreme faces of the V-shaped wedge at the bottom of the body and rest on the parallel bearing-faces of the hollow-slotted extension, there is still a contracting and expanding motion of the cutter, depending on the upward or downward movement of the same over the spreading-bearing, due to the angular dovetail grooves on the body and the cutter following them. That is the tilting action to which you have referred heretofore, is it? A. It is.

Q. 253. Then the principle of action of the Double reamer, either old style or new style, in expansion or contraction is a compound action, having, first, a spread due to the cutters being drawn over a wedge, and then a tilting action? Is that your understanding of the principle of such action of such Double underreamers in that regard?

A. The expansion and contraction of the Double underreamer-cutters is produced by a combination of means.

Q. 254. And this combined action is the combination set forth in my last preceding question? Is that correct?

(Deposition of Elihu C. Wilson.)

Mr. BLAKESLEE.—The witness has several times testified all the way through from start to finish as to both the collapsing and expanding action of the cutters of the Double reamers. It does not seem to be the proper method of cross-examination for counsel to state certain answers which he manifestly wishes to obtain and then get the witness to adopt his questions as answers, particularly when the witness has answered fully as to such matters.

A. The combination I refer to is the tilting action of the cutters over the hollow-slotted extension, in the case of [166] the old styled reamer, together with the inward or outward throw of the upper ends of the shanks of the cutters when following the dovetail grooves or ways, and in the improved styled underreamer the combination is that of the cutter sliding up over the spreading-bearing at the end of the hollow-slotted extension and also over the same bearings which extend laterally to the periphery of the underreamer body, and coming in contact with corresponding bearings at the backs of the cutters, and also by the inward or outward throw of the shanks of the cutters when following the inclined dovetailed ways.

Q. 255. (By Mr. LYON.)—Now, please answer the last question yes or no.

A. (The question having been read.) I believe the cutters have the tilting action at the same time that they are being drawn over the wedge, and consequently your description of the action is not quite correct, in my opinion.

(Deposition of Elihu C. Wilson.)

Q. 256. It is a combination or compound action of these two just specified by you, is it?

A. I think the two actions take place at one and the same time to a certain degree, or during a certain part, at least, of the expansion or contraction of the cutters.

Q. 257. It is a compound action consisting either coincidentally or successively, of these two actions? Is that correct?

A. Yes, sir; I think I am safe in saying that is a fact.

Q. 258. Now, in the underreamer shown in the drawings and described in the specifications of Complainant's Exhibit Wilson Patent, is the principle of expansion of such reamer in a combination or compound action of such tilting and wedge action, either simultaneous or successive?

A. I have explained before that the only means provided [167] for expanding the cutters of the Wilson underreamer is the wedge shaped lugs or projections which form the extreme lower ends of the prongs of the reamer-body, namely, that portion of the prongs which extend downward below the lower ends of the dovetail shoulders, and which are designated in the patent as 2'. As the shanks of the cutters practically remain stationary on their suspension means during the expansion or contraction of the cutters, there is no chance whatever to produce the teetering action referred to in describing the old style Double underreamer.

Q. 259. Now, having explained, please answer the

(Deposition of Elihu C. Wilson.)

last question yes or no. (Question No. 258 is read.)

A. Therefore, it will be clear that the expansion and contraction of the Wilson underreamer-cutter is not a combination of the tilting action or teetering action and the expansion due to a wedge being interposed between the cutters.

Q. 260. The expansion of the Wilson underreamer then is due solely to the sliding of the bits up a wedge? Is that correct? A. That is correct.

Q. 261. What is the purpose in the Wilson underreamer of providing the dovetails upon the body and upon the cutters?

Mr. BLAKESLEE.—We object to the use of the term “dovetail” in this question as not following the previous testimony or the patent.

A. The dovetailed shoulders or projections which form retaining means for the cutters and the corresponding shoulders of the shanks of the cutters are simply means for retaining the cutters firmly in position in the reamer body. They are simply a retaining means.

Q. 262. (By Mr. LYON.) Against what do they retain the cutters in the body? [168]

A. Against the outward tendency or strain, namely, that strain which has a tendency to pry the upper end of the shanks outwardly or to pry the cutter outwardly from the body.

Q. 263. At the time this suit was filed by you against the Union Tool Company, a suit was pending in this court by the Union Tool Company et al., complainants, against the Wilson & Willard Manu-

(Deposition of Elihu C. Wilson.)

facturing Company for infringement of letters patent of the United States grantor to Edward Double, No. 734,833, dated July 28, 1903, by reason of the manufacture of the underreamers not only like the drawings and description of the specifications of Complainant's Exhibit Wilson Patent, being letters patent of the United States No. 827,595, but also like Complainant's Exhibit Wilson Underreamer here in evidence? Is that correct?

A. Yes, sir; that is correct, granting that the dates and numbers you gave are correct.

Q. 264. You have verified the dates and numbers?

A. I have verified the numbers of the reamers—Did you give the date that that suit was filed?

Mr. BLAKESLEE.—No; only the date of the patent.

A. Yes; that is correct.

Q. 265. (By Mr. LYON.) And at the time of filing this suit you were engaged in assisting, as president of the Wilson & Willard Manufacturing Company and as the owner of one-half of the capital stock thereof, in the defense of such suit and in giving evidence on behalf of the defendant therein? Is that correct?

A. Yes, sir; with the exception of a correction that I might make that I owned substantially one-half of the stock.

Q. 266. How long had you been familiar with the letters patent of the United States No. 734,833 issued to Edward Double, before you built your first underreamer like Complainant's Exhibit Wilson Patent, letters patent 827,595?

(Deposition of Elihu C. Wilson.)

Mr. BLAKESLEE.—Objected to as irrelevant, incompetent and immaterial, not cross-examination. The Double patent has [169] nothing to do with the issues in this case, although it may have had considerable to do with the issues if the other suit referred to, and which are not yet determined. Present issue concerns the production of the defendant, irrespective of what relation there may be between those reamers and the said patent.

A. I believe the first Wilson underreamer was built before I ever saw the Double underreamer patent or knew what it claimed.

Q. 267. (By Mr. LYON.) Prior to your building the first reamer like Complainant's Exhibit Wilson Patent or having a full conception of such a reamer, is it a fact that you were familiar with the Double underreamer built in substantial accordance with Double Patent No. 734,833?

Mr. BLAKESLEE.—The same objection, and the further objection that it is not cross-examination, irrelevant, immaterial and incompetent. There has been no foundation laid in this case so far relating to the Double patent.

A. Yes, sir; I was more or less familiar with it.

Q. 268. (By Mr. LYON.) You had seen such reamers in the oil fields? A. I had.

Q. 269. I now show you letters patent of the United States No. 683,352, issued September 24, 1901, to J. C. Swan, and ask you if you had ever seen a reamer built in substantial accordance with the drawings and specifications of that patent prior to

(Deposition of Elihu C. Wilson.)

the time when you built your first reamer illustrated and described in Complainant's Exhibit Wilson Patent, or had a full conception of such Wilson reamer?

Mr. BLAKESLEE.—Objected to as irrelevant, immaterial, incompetent, not cross-examination, and as calling for a mere conclusion. The direct examination has only referred to the Swan underreamer and not in any place to the Swan patent. [170]

A. I had seen Swan underreamers; yes, sir.

Q. 270. (By Mr. LYON.) Built substantially in accordance with the patent that I have just mentioned?

Mr. BLAKESLEE.—The same objections.

A. Yes, sir; I believe they were very much like that.

Q. 271. (By Mr. LYON.) Now, with particular regard to the bits or cutters shown in this said Swan patent No. 683,352, did the Swan reamers which you were so familiar with prior to the building of the first Wilson underreamer or the completion thereof by you as above specified by me, contain and embrace cutters or bits constructed in substantial accordance with the drawings of this patent and its description?

Mr. BLAKESLEE.—The same objection, and the further objection is made that this is not a proper method of presenting any defense in this case, and notice of motion is given to strike out from the record all such irrelevant, immaterial and incompetent testimony as may flow from this line of questioning,

(Deposition of Elihu C. Wilson.)

and counsel is again cautioned to confine his inquiries to cross-examination.

Mr. LYON.—The witness on direct examination referred to certain reamers with which he was familiar prior to the building of the first so-called Wilson reamer, and I propose to show what those reamers were.

Mr. BLAKESLEE.—If counsel wishes to produce those reamers for identification by the witness, or to get the witness to describe them, I suppose that would be cross-examination. But the Swan patent is not a proper subject of cross-examination.

(The question is read by the rotary.)

A. The Swan underreamer which had come to my notice before I made the first Wilson underreamer or had the first Wilson underreamer made, was in the shop of the Baker Iron Works of this city, and to the best of my recollection those cutters [171] differed from these.

Q. 272. (By Mr. LYON.) In what way did they differ?

A. I am quite sure that those cutters were virtually formed in two pieces. One was a block which fitted into the dovetailed ways of the hollow-slotted extension of this Swan reamer, and it had dovetailed means for fastening the cutters into this block, and that does not seem to appear on this drawing of the Swan underreamer and patent.

Q. 273. Otherwise than as the cutters were made in two pieces, did their general outline and shape and configuration and manner of operation in the

(Deposition of Elihu C. Wilson.)

body portion of the Swan underreamer, conform substantially to the drawings and specifications of this Swan patent to which I have just referred?

Mr. BLAKESLEE.—The same objection.

A. As to the exact shape of the cutter or piece which fitted into the movable or traveling block, as I remember the construction of that reamer, I am not in a position to say. But I can testify that the cutter when it was combined of the two pieces traveled on these inclined ways as it expanded or contracted substantially the same as shown in this drawing.

Q. 274. (By Mr. LYON.) It is a fact, is it, that as early as 1903 you had in your possession a copy of this Swan patent No. 683,352?

Mr. BLAKESLEE.—The same objections.

A. No, sir; I am not sure that I saw that patent at that date.

Q. 275. (By Mr. LYON.) Did you not secure a copy thereof from me in the office of Townsend Brothers in the Bradbury Block, in the city of Los Angeles, either in June or July, 1903, at the time when you brought up a model of an underreamer and showed it to me there?

Mr. BLAKESLEE.—The same objection. [172]

A. No, sir. I don't remember that I obtained any patents from you.

Q. 276. (By Mr. LYON.) Do you testify positively that you did not?

A. I have positively no recollection of getting a patent from you or a copy of a patent.

(Deposition of Elihu C. Wilson.)

Q. 277. Did you secure in 1903 copies of any underreamer patents?

Mr. BLAKESLEE.—The same objection.

A. I can't say definitely that I did.

Q. 278. (By Mr. LYON.) Can you say that you did not?

Mr. BLAKESLEE.—The same objections.

A. At that time I cannot remember that I was as much concerned in patents as I was in perfecting an underreamer, and I do not remember obtaining copies of the patents at that time.

Q. 279. (By Mr. LYON.) What other reamers besides the Double reamer and the Swan reamer had you seen prior to the time when you built your first reamer like Complainant's Exhibit Wilson Patent, or had worked out such reamer in your mind?

A. I had seen the Austrian reamer which we were then manufacturing, or, rather, which the Baker Iron Works was then manufacturing; I think I had seen the Plotts underreamer; I had seen the Kellerman underreamer, and I had seen the North underreamer. I had seen a reamer made by a man by the name of Joe Magney which was made in the shops of the Baker Iron Works, and I had seen a reamer that was made for a man who was then operating in the Los Angeles oil fields, but whose name I have now forgotten. These reamers were made by the Baker Iron Works and were used in the Los Angeles oil field. I also saw a reamer made by Arthur Willard or made for him in the shop of the Baker Iron Works, which reamer was a moveable-wedge proposi-

(Deposition of Elihu C. Wilson.)

tion with the cutters suspended on stationary pins, and I think I saw the O'Donnell & Willard reamer. I think that is about the amount of [173] reamers that I had seen.

Q. 280. Hadn't you prior to that time seen the so-called National reamer which was turned out by E. E. Mills in the National Supply Company of Los Angeles?

A. Yes; I had seen that, and I also saw a reamer made for a man named Swan who was a different Swan from the J. C. Swan of the patent. That man was at that time co-operating with the American Steel & Wire Company of this city.

Q. 281. I show you letters patent of the United States No. 674,793, dated May 21, 1901, to Edward North of Los Angeles, California, for underreamers, and ask you to examine the same and state whether the North reamer to which you have just referred was built in substantial accordance with the drawings and specifications of this patent, having particular relation to bits and cutters.

Mr. BLAKESLEE.—The same objection as last previously noted.

A. There is a lot of mechanism in regard to the trip action and setting of this reamer that I am not in a position to say is exactly the same, for I had never seen the interior parts of the North reamer. But I know the cutters were suspended in about the same manner, and, in a general way, this reamer seems to be about the same as the actual reamer that I saw.

Q. 282. (By Mr. LYON.) I also show you a

(Deposition of Elihu C. Wilson.)

copy of letters patent No. 679,384, dated July 30, 1901, to John M. Kellerman of Los Angeles, California, for underreamers, and ask you similarly with respect to the same to state whether the Kellerman reamers which you referred to were built in substantial conformity with the specifications and drawings of these letters patent, particularly with reference to the bits and surfaces coacting with the bits in expansion and contraction.

Mr. BLAKESLEE.—The same objection. [174]

A. So far as the bits and spreading-means are concerned. I think they are practically the same.

Q. 283. (By Mr. LYON.) I likewise show you letters patent of the United States No. 762,435, dated June 14, 1904, issued to James A. O'Donnell and Arthur G. Willard, of Los Angeles, California, for underreamers, and similarly ask you to inspect the drawings and specifications thereof and state whether or not the O'Donnell and Willard reamer which you state you were familiar with was constructed in substantial accordance with the drawings and specifications of this patent, particularly in so far as the bits or cutters and the coacting surfaces in expansion and contraction are concerned?

Mr. BLAKESLEE.—The same objection.

A. With the exception of the features for apparently locking the cutters up into place and probably a few minor features there, this is substantially the same.

Q. 284. (By Mr. LYON.) In your last answer you refer to the bolt 16, spring-holding plug 19, and

(Deposition of Elihu C. Wilson.)

the associated locking device, do you?

A. Yes. Those are the parts. I do not believe they appeared on the reamer,—on the O'Donnell and Willard reamer I saw.

Q. 285. But the bits were like the bits on the drawing of this patent?

Mr. BLAKESLEE.—The same objections.

A. I think in a general way I can say that the cutters are the same. I don't know as the portions are absolutely in the form of construction, but they resembled those cutters.

Q. 286. (By Mr. LYON.) When were you employed at the Baker Iron Works at Los Angeles, California?

A. From the year 1897 to the year 1904.

Q. 287. During the year 1903 did you meet a man by the [175] name of Alexander Cummings at the Baker Iron Works?

Mr. BLAKESLEE.—Objected to as not cross-examination, irrelevant, immaterial, incompetent, and no foundation laid for the inquiry.

A. I did not.

Q. 288. (By Mr. LYON.) Did not said Alexander Cummings at the Baker Iron Works in Los Angeles, California, during the year 1903, show you a wooden model of an underreamer?

Mr. BLAKESLEE.—The same objection.

A. He did not.

Q. 289. (By Mr. LYON.) You know the Alexander Cummings to whom I refer, do you?

A. The first time I ever saw or heard of him was

(Deposition of Elihu C. Wilson.)
after my underreamer was in use.

(An adjournment is now taken by consent of counsel until to-morrow, Friday, March 27, 1914, at 10 o'clock A. M., at the same place.)

Friday, March 27, 1914,
10 o'clock A. M.

This being the time and place to which the further taking of proofs in this cause was continued, the proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

Mr. BLAKESLEE. — Complainant's counsel wishes to again object to the extension of cross-examination or purported cross-examination along the lines as to which repeated objections have been urged; and particularly when such purported cross-examination invades the field of defense. Counsel must understand that this is not the proper time for him to put in the defense in [176] this suit. Repeated objections have been recorded to the questioning of this witness with respect to the O'Donnell and Willard patent and some O'Donnell and Willard reamer, and also the same objection has been urged against informal discussion of those patents. In this connection it is to be noted that the defendant's answer sets up the said O'Donnell and Willard patent, as to which the witness was interrogated yesterday, and also set up certain acts by one Thomas A. O'Donnell and one Arthur G. Willard, or certain knowl-

edge and use by them, purporting to be pertinent to the patent in suit. It is entirely improper for counsel for the defendant to present these matters at this time. To do so puts counsel for complainant in the position of either cross-examining his own witness, as to which it is believed counsel for the defendant would vigorously object, or to complainant's counsel examining his own witnesses in redirect after the bolt has been shot by counsel for complainant in direct. If counsel wishes to interrogate the present witness along these lines or any other witnesses along these lines, he is open to his procedure to produce them, by subpoena if necessary, and counsel for complainant will then have proper opportunity to cross-examine such witnesses as to such matters of defense in the proper manner and in the manner in which he is entitled to take up such evidence. This objection is more or less an echo of an objection made by counsel for the defendant, then counsel for complainant, in another suit concerning underreamers which the present witness has admitted to be now pending between the defendant in this action and others and Wilson & Willard Manufacturing Company, at which, at least at the time of taking proofs in said other suit, the present witness was present. During the examination of the witness Double, president of the complainant corporation in that suit and the defendant corporation in the present suit, the same O'Donnell and Willard letters patent were submitted to the witness Double, and [177] counsel for defendant, then counsel for complainants, objected as

follows (page 83 of the record in the case), pertinent to question 61: "Mr. LYON.—We object to that on the ground that it is not cross-examination." We propose to continue the taking of testimony in this case at such times and places as we elect, that is, such testimony as we take for complainant, and we refuse to leave this room this morning or at any other time unless it so pleases us to repair to any other place for the purpose of taking testimony for complainant. If counsel for defendant has testimony and evidence to adduce as to which he thinks the present witness may have something to say, he will, of course, have the proper opportunity to so produce in taking proofs for the defendant. Under stipulation the testimony is being taken out of court in this case and no reason is known for repairing to the Federal Building, as at this time is proposed by defendant. If counsel wishes an opportunity to repair to the Federal Building for the purpose of any inspection, we will be glad to accord him the opportunity by suitable adjournment or suspension of proceedings, but the notary, the witness and counsel for complainant will not accompany him. We believe that it is so clear a case of attempting to build up defendant's case in cross-examination by producing evidence solely pertinent to the defenses set up in the answer, if pertinent at all, that there can be no possible course open to us than to refuse as above to assist in any such informal proceeding, and to sacrifice the proper advantages to be reserved to complainant to cross-examine any such witnesses as may be produced in connection with the

offer of evidence under the answer on behalf of the defendant. And we again reiterate our objection to the continuation to the cross-examination which has already been unnecessarily protracted and which has so extensively dealt with matters purely of defense, if pertinent at all, not germane or responsive to the direct explanation of this witness. [178]

Mr. LYON.—This statement of counsel is objected to as argumentative and, therefore, a violation of the rules in equity which require that objections shall be stated without argument. As counsel for complainant is violating such rule, and as complainant is paying the cost of such violation at the present time, I will answer such argument solely to the extent of stating that the facts and circumstances of the attempt to interrogate Mr. Double, when called as a witness on behalf of the defendants in the suit pending between the Union Tool Company, Edward Double et al., as complainants, against the Wilson & Willard Manufacturing Company, Defendant, for infringement of the Double patent, referred to by the witness Elihu C. Wilson in his testimony in this case, stood upon an entirely different footing than the cross-examination in this case so objected to by counsel for complainant. In the case referred to Mr. Double had in no wise referred to any prior underreamers existent before his invention, nor was there anything in his direct examination to indicate that he had any knowledge or ever had any knowledge of the so-called O'Donnell and Willard patent or alleged underreamer prior to his invention. The matter objected to there, therefore,

was clearly not cross-examination. On the other hand, when the present witness, at the instigation of counsel for complainant, has brought out the fact that he was prior to the alleged invention of the device exhibit Wilson Patent, familiar with many other reamers. In his answers he has named some of them and stated that there were many others. The defendant insists, therefore, that he has a right to cross-examine the witness as to such knowledge to fully show the facts, and that the cross-examination is germane to the direct examination of the witness. The request is now made of the notary to adjourn the proceeding to the basement of the Federal Building in this city where the exhibits in the action of the Union Tool Company et al. vs. Wilson & Willard Manufacturing Company are stored, that the witness may identify [179] certain of said exhibits and that the same may be offered in evidence here in this proceeding. Such exhibits are on file as a part of the court records in said prior suit and weigh respectively from 900 pounds each to 150 or 200 pounds each, and it is simply for the convenience of the parties and to avoid delay that this request is made.

Mr. BLAKESLEE.—We must disagree somewhat with counsel's statement as to the want of analogy between the Double witness situation and the Wilson witness situation. The record in the other suit referred to shows on page 82 that the—

Mr. LYON.—Just a moment. We object to counsel under the guise of an objection testifying in the case and any statement that he makes as to what the

record in said case shows *in* objected to as incompetent and not the best evidence, and is irrelevant, incompetent and immaterial in this case.

Mr. BLAKESLEE.—This statement is made wholly as responsive to counsel's statement. On page 82 of that record the witness was asked as to certain prior underreamers and testified that they were in use prior to the production of the Double underreamer, and that testimony was brought out before the question was put as to the O'Donnell and Willard reamer patent. Furthermore, we must again call counsel's attention to the fact that the record and examination on direct of this witness did not go into the question of reamers in general, but the question related to reamers that were on the market prior to the production of the Wilson reamer. We contend that this does not open the door for cross-examination as to every old kind of underreamer that may or may not have been used by somebody—Cumings or anybody else—irrespective of whether they were standardized commercial products. And we must instruct the notary, insofar as these proceedings are concerned, that we propose to continue our taking of proofs here without any adjournment at this time [180] and without repairing to the Federal Building for the purposes of the request. So that counsel may continue the proper cross-examination of this witness or we shall be forced to call another witness.

Mr. LYON.—Passing the above question for the time being, I will now proceed with the cross-examination of the witness.

(Deposition of Elihu C. Wilson.)

ELIHU C. WILSON, complainant, called as a witness in his own behalf, testified as follows:

Cross-examination (Resumed).

(By Mr. LYON.)

Q. 290. Mr. Wilson, on November 18, 1912, you were sworn as a witness on behalf of the defendant Wilson & Willard Manufacturing Company, in the suit referred to by you as pending in this court wherein the Union Tool Company et al. are complainants, and the said Wilson & Willard Manufacturing Company is defendant, involving the alleged infringement by the Wilson & Willard Manufacturing Company of the Double underreamer patent, were you? A. Yes, sir.

Q. 291. On direct examination you were asked the following question in that case: "Q. 44. Did you at that time know of the issuance of U. S. Letters Patent No. 762,435, for underreamers and drills, granted to O'Donnell & Willard June 14, 1904?" And answered: "A. I didn't know of the patent. I knew of the tool they made." You were asked that question and gave that answer at that time, did you?

Mr. BLAKESLEE.—We again object to this as not cross-examination.

A. Yes, sir; I believe that is correct.

Q. 292. (By Mr. LYON.) On the same date and in the same [181] testimony you were asked on your direct examination: "Q. 42. During the development of your invention, did you or did you not have before you other sources of information to assist you in determining the state of the art of underream-

(Deposition of Elihu C. Wilson.)

ing at that time?" and you answered: "A. The sources of information I had were through catalogs and through the tools which were in actual use; also through information I received and gathered from oil-well men who were using underreamers." Is that correct?

Mr. BLAKESLEE.—The same objection.

A. I believe that is correct.

Q. 293. (By Mr. LYON.) Reading further from your deposition in that case as follows: "Q. 45. Did you or did you not, at the times last referred to, number among your acquaintances either of the patentees of said letters patent No. 762,435? A. Yes, sir; I knew them both. Q. 46. Had they or had they not, at or prior to such times, brought to your attention anything relating to the subject of said letters patent No. 762,435? A. Mr. Willard informed me that they had applied for patents on that underreamer. Q. 47. (By Mr. BLAKESLEE.) Please state what, if anything, came to your notice in any manner, at the times referred to, with respect to this patent 762,435 and the subject thereof? A. Well, I was informed by Mr. Willard that he and Mr. O'Donnell had applied for patents on the underreamer which they were trying out. I believe the first underreamer they had made was made somewhere in the East. At the time that reamer was shipped out and tried I was not giving much attention to underreamers not oil-well tools in any way. I think I was acting as bookkeeper for the Baker Iron Works at that time and in that capacity didn't come in contact with

(Deposition of Elihu C. Wilson.)

the use of the tools. Q. 48. (By Mr. BLAKESLEE.) Did you, at the times mentioned, namely, when you were developing your invention referred to, know anything about the shipping out of the [182] underreamer to which you have referred? A. No, sir. There was nothing that came to my notice.

Q. 51. (By Mr. BLAKESLEE.) Have you examined the Willard & O'Donnell underreamer introduced in the course of these proceedings by defendant? A. I have. Q. 52. Will you please now compare or contrast that underreamer with the underreamer patented by you, as testified? A. Compare the O'Donnell & Willard underreamer with the Wilson underreamer? Q. 53. Yes. A. The O'Donnell & Willard underreamer differs from the Wilson underreamer, in that it has for its spreading-bearings an extension or wedge-shaped partition, which is hollow, to receive a spring or spring actuated key or T-rod, and it has a slot in it, through which slot the key or T operates vertically as the slips or cutters are drawn up or down, as the case may be, when in operation. The O'Donnell & Willard underreamer has tapering pockets into which the cutters fit. The cutters differ from those of the Wilson underreamer, in that they have only one bearing-face which strikes against the spreading-wall or hollow slotted extension. The cutters of the O'Donnell & Willard underreamer take their thrust-bearing on the upper face of an annular shoulder on the cutters, also a portion of the thrust is taken at the upper end of the cutter, while with the Wilson underreamers the thrust-

(Deposition of Elihu C. Wilson.)

bearing is taken at the upper end of the shank of the cutter only. The O'Donnell & Willard underreamer retains its spring in place by means of this hollow slotted extension, which is itself detachable, which serves the purpose of the spreading-bearing for the cutters, also as a seat for the spring, and, furthermore, as a guide for the spring actuated rod and key. The Wilson underreamer differs from the O'Donnell & Willard underreamer in several very material points: First, that the expansion of the cutters is accomplished in an entirely different way. Instead of having a hollow slotted extension or spreading-bearing for expanding the [183] cutters, it has two prongs or extensions of projections which extend down from the lower end of the body. These prongs have retaining shoulders on the inner walls of same and the lower ends of the two prongs terminate in wedge-like projections which themselves form the spreading means for the cutters and also serve as the bearings for the cutters when the cutters are expanded in the reaming position, thus holding the cutters firmly in reaming position. The spring and T of the Wilson reamer are suspended in place by means of a collar, which collar was in turn held in place in the reamer body by means of dowelpins or screws. Unlike the O'Donnell & Willard underreamer, there was no portion or part of the reamer body itself interposed between the cutters when the cutters themselves were collapsed, ready to run into the casing, while with the O'Donnell & Willard underreamer, the hollow slotted extension still re-

(Deposition of Elihu C. Wilson.)

mained between the two cutters when the cutters were collapsed in position, for running into the casing. The cutters of the O'Donnell & Willard underreamer, after being drawn downward compressing the spring to do so, tilted over this hollow slotted extension, closing them together; but with the Wilson underreamer the cutters collapse by simply drawing them down until the shoulders of the cutters were below the spreading-bearings or extensions, which are the lower terminations of the forks of the reamer body. The cutters do not actually tilt over any bearings or any stock of the reamer body interposed between the cutters. In this way its collapsing action differed very materially from that of the O'Donnell & Willard underreamer. When the cutters were drawn down in their collapsible position, there was no material in the reamer body over which they could tilt, as they were below any such stock. The Wilson underreamer has no feature in its construction whatever which in any way resembles this hollow slotted extension or stationary wedge used by the O'Donnell & Willard underreamer. The space occupied by this wedge or hollow slotted extension in the O'Donnell & Willard underreamer is an open [184] cavity in the Wilson underreamer; there is no material there at all. In fact, that open cavity here would be the space between the two forks of the Wilson underreamer. Another thing, the Wilson underreamer employs a bolt or pin which extends across the mouth of the underreamer, extending from one prong to the other and which acts as a safeguard against the

(Deposition of Elihu C. Wilson.)

loss of cutters should the T to which the cutters are attached be broken. There is absolutely nothing like that device on any other reamer, particularly not on the O'Donnel & Willard underreamer. The Wilson underreamer cutter has an enlarged body which forms shoulders extending at right angles to the shank of the cutter. These shoulders are so shaped that they ride on these wedge-like extensions or projections of the prongs, and when the cutters are collapsed together, they are held in that position largely by these shoulders resting or bearing against the beveled ends of these wedge-like projections. There is no similar device on the O'Donnel & Willard underreamer. There are other minor differences but, in the main, those are the chief differences between the O'Donnell & Willard underreamer and the Wilson underreamer. I might add that the body of the Wilson underreamer is one single piece; it has no middle joint in it."

The questions which I have just quoted were asked you and the answers which I have just quoted were given by you to such questions in the said deposition in the said case, were they, and I have read a correct statement of such questions and answers?

Mr. BLAKESLEE.—We again object to this question as not cross-examination, no foundation being laid in the direct examination of this witness for any such course of inquiry, and it is therefore irrelevant, immaterial and incompetent, and is unnecessarily further incumbering the record. We must repeat our notice of a motion to tax to the defendant the

(Deposition of Elihu C. Wilson.)

cost of taking and returning these extended portions of his deposition which are contended to be improper. As to counsel's previous objection that remarks [185] of counsel for complainant are argumentative in places, it is only desirable to sufficiently and fully state the grounds of the objection as is demanded in accordance with Equity Rule No. 51.

A. I believe so; yes, sir.

Q. 294. (By Mr. LYON.) When you say in your last answer you believe that is the case, you know that such is the case, do you?

Mr. BLAKESLEE.—The witness has not had an opportunity with his own eyes to compare the question with the record in the other case, but we are perfectly willing to concede that the witness so testified.

A. I do.

Q. 295. (By Mr. LYON.) In giving your testimony in said case of the Union Tool Company against Wilson & Willard Manufacturing Company you were asked the following questions and gave the following answers: "Q. 54. You have testified as to certain desired features of improvement which actuated you in the development of your invention of the subject of 'Defendant's Exhibit Wilson Underreamer Patent.' Please state whether or not you find any such features disclosed in 'Defendant's Exhibit Willard & O'Donnell Patent.' A. Yes, sir; the same objections would hold good in a number of instances. For instance, the cutters of the O'Donnell

(Deposition of Elihu C. Wilson.)

& Willard did not have sufficient expansion— Q.

55. Let me interrupt for the purpose of obtaining a responsive answer and call your attention again to the question, which I will ask the reporter to re-read. (Last question read by the Special Examiner.) A. You mean to say whether the O'Donnell

& Willard patent overcame the objections to the other? Q. 56. That is in substance what I mean.

In other words, I wish you to state whether the underreamer disclosed in the Willard & O'Donnell patent furnishes and supplies any of the features of improvemetnt which you sought [186] to establish in the working out of your patented invention.

A. About the only features it disclosed is the extreme width of the cutters. Its cutters were very broad, thus reaming a large portion or segment of the hole at each stroke of the tools. Q. 57. Please

answer, similarly, with respect to the underreamer 'Defendant's Exhibit Willard & O'Donnell underreamer.' A. Well, it is evident from a glance at that reamer that its cutters were very broad and that it will overcome at least one of the faults of other underreamers in use at that time by having broad cutters instead of narrow ones." Is that correct?

Mr. BLAKESLEE.—The same objection.

A. Yes, sir; that is correct.

Mr. LYON.—In connection with the cross-examination of this witness we offer in evidence the underreamer referred to in question 57 of this witness's deposition in the said action of the Union Tool Company et al. vs. Wilson & Willard Manufacturing

(Deposition of Elihu C. Wilson.)

Company, and identified by this witness in his said deposition in that case and marked therein "Defendant's Exhibit Willard & O'Donnell Underreamer," and ask that the same be marked "Defendant's Exhibit Willard & O'Donnell Underreamer," the same being now in the possession of the clerk of this court.

Mr. BLAKESLEE.—We object to the offer of this exhibit upon the grounds of the objection last urged and as indefinite, the reamer not being before us for identification, and as far as our present knowledge is concerned not even being in existence excepting on the assumption that it is still in the files of the clerk of said court, and as being improperly introduced at this time in connection with improper purported cross-examination, as being irrelevant, immaterial and incompetent, and there being no foundation laid in the direct examination of this witness for the production of any such purported exhibit. And we again insist that if this exhibit is to be considered in this case at all it [187] shall be so produced, that counsel for complainant may have the proper opportunity to cross-examine any witness in connection with whose testimony such exhibit is offered.

Q. 296. (By Mr. LYON.) In your same deposition in said case you were asked the following questions and gave the following answers: "Q. 59. Have you at present any business relations with Mr. Arthur G. Willard, one of the patentees of said Willard & O'Donnell patent? A. I have. Q. 60.

(Deposition of Elihu C. Wilson.)

Please state what they are. A. He is vice-president and treasurer of the Wilson & Willard Manufacturing Company, and I am president of the same concern. Q. 61. How long has that relation continued?

A. About five years. Q. 62. Have you at

any time discussed with him the question of manufacture of the underreamer patented by said Willard & O'Donnell patent?

A. Yes, sir. Q. 63. Did you

ever at any time arrive at a definite determination whether or not your company should manufacture these Willard & O'Donnell underreamers?

A. We did. Q. 64. Please state what the determination

was. A. We concluded that the Wilson under-

reamer was an advantage over the O'Donnell & Willard underreamer in design, and that it was alto-

gether a better designed underreamer and that it was useless for us to attempt to put the O'Donnell & Will-

ard underreamer on the market in competition with it. That is correct, is it?

Mr. BLAKESLEE.—The same objections.

A. That is correct.

Q. 297. (By Mr. LYON.) In the same suit to which you have referred, Union Tool Company et al.

vs. Wilson & Willard Manufacturing Company, pending in this court, you were called as a witness

in rebuttal on behalf of Complainants, were you?

A. Yes, sir; I was subpoenaed.

Q. 298. And were asked the following questions and gave the following answers: "Q. 914. Then, do

you understand, and testify, from your mechanical knowledge, that the extension of the [188]

(Deposition of Elihu C. Wilson.)

spreading-surface of 'Complainants' Exhibit Double Underreamer' to the periphery of the body, and the corresponding extension of the expanding shoulders of the bits to bear thereagainst, involves the same mode of operation as in 'Defendant's Exhibit Wilson Underreamer Patent,' so far as the expansion and contraction of the bits are concerned? A. The mode of operation, namely, the acts or forces required, and which must be applied to the cutters to expand or contract them—I mean those forces employed which are in nowise any part of the reamer itself—is not changed by the change in design occasioned by extending the spreading-bearings to the periphery of the body. That principle is old; it has been used on various underreamers long before Mr. Double ever employed it. Q. 915. What forces, in your last answer, or acts, do you refer to as not being in anywise any part of the reamer itself? A. I mean the forces that are employed to draw the cutters downwardly overcoming the tension of the spring so that they will collapse over the end of the hollow-slotted extension. Q. 916. Now, so far as the underreamer, 'Complainants' Exhibits Double Underreamer' is concerned, in its mechanical embodiment, and the device described and shown in 'Defendants' Exhibit Wilson Underreamer Patent,' is concerned, from your understanding of mechanics do you understand that the extension of the spreading-surface of 'Complainants' Exhibit Double Underreamer' to the periphery and the corresponding extension of the expanding shoulders of the bits thereof to bear there-

(Deposition of Elihu C. Wilson.)

against involve the same mode of operation, or do they involve a different mode of operation? A. The same mode of operation will collapse the cutters or expand them to reaming position. Q. 917. Based upon your knowledge of mechanics, does this extension of the spreading-surface of 'Complainants' Exhibit Double Underreamer, to the periphery and the corresponding extension of the expanding shoulders of the bits thereof to bear thereagainst, involve the same principle of action in the expansion and contraction of the bits or cutters as is [189] involved in the device shown and described in 'Defendants' Exhibit Wilson Underreamer Patent'? A. There is a different principle of action. Q. 918. In what does that different principle of action consist, in your opinion? A. Well, that question will require considerable time to answer. It has been answered two or three times before, and at considerable length. Q. 919. You should be capable of a concise answer; and, will you please give it, so that we may know exactly what you have in mind after a complete study of the matter? A. The means employed to expand the cutters of the Double underreamer—either Complainants' Exhibit or Defendant's Exhibit Double Underreamer—consist of three main features: First, is the stationary wall or partition, so placed on the reamer body itself, and integral with the body, that it forms a wedge or a spreading-bearing between the cutters. The faces of this stationary wall are parallel, that is, the bearing-faces or the opposite faces on which the

(Deposition of Elihu C. Wilson.)

cutters rest when in expanded position. The cutters themselves have V-shaped grooves planed across the backs of the cutters, and which grooves are necessary in order to permit the cutters to collapse over this stationary wall or partition, or hollow-slotted extension, as it is repeatedly termed in the Double underreamer patent. In addition to the tilting action or collapsing action of the cutters, namely, the action produced by swinging the cutting end of the cutters toward each other as the cutters are collapsed over this spreading-bearing of the reamer body when the cutters are drawn down sufficiently for them to slide over and below the lower end of the hollow-slotted extension, there is an additional means employed to enable them to collapse and also to assist in expanding them, and that is due to the upwardly and inwardly inclined grooves, which form pockets to engage the shanks of the cutters. By reason of these pockets being at an angle with the vertical line of the reamer body, the angle being inwardly and [190] upwardly, the cutters are obliged to follow the trend of these grooves when being drawn downwardly to collapse the same, or when being drawn upwardly by the power of the spring when expanding them to reaming position. Now, the combination of the wedge-like action of the hollow-slotted extensions, also by reason of the beveled face on the projection or shoulder on the inner faces of the cutters, which projection or shoulder is produced by the V-shaped grooves planed across the backs of the cutters, also by the additional action or force

(Deposition of Elihu C. Wilson.)

occasioned by the angularly planed grooves or channels in which the cutters travel, all together produce the contraction and expansion principles of action of the Double underreamer in both defendant's and complainants' exhibits. In other words, there are means on the cutters themselves, and also on the bodies, the combination of which means produce the action. To obtain this action it is necessary for the cutter to teeter during the time of its collapse or expansion. When the cutters are being collapsed the upper end of the cutter, namely, all of that portion of the cutter which is above the point of contact on the spreading-bearing of the body, tilts outwardly and slides upon the key to which it is suspended while so doing. The lower end of the cutter tilts inwardly at the same time. Thus, the cutter produces a teetering action, the fulcrum being at the point of contact at the inner face of the cutter, where it bears against the spreading-bearings of the reamer body. Now, with the Wilson underreamer, there is no such teetering action. It is true the extreme upper end of the cutter has a tendency to tilt outwardly while the cutters are being collapsed and drawn downwardly into collapsed position, but it is only that portion of the cutter which is above the suspension means—very different from the Double cutters, as his cutters tilt outwardly above the bearing-points or points of contact on the reamer body. With the Wilson reamer the cutters do not slide inwardly or [191] outwardly upon the suspension-means or T; they merely swing from the

(Deposition of Elihu C. Wilson.)

suspension-means as a pendulum swings. The expansion or contraction of the Wilson underreamer cutters is produced by the following means: The tapering ends or wedgelike projections which form the lower extremities of the forks or two prongs of the reamer body act as wedges or spreading-bearings upon which the cutters ride. The points on the cutters which contact with these spreading-bearings of the reamer body are placed in an entirely different position on the cutter from the point of contact on the Double underreamer cutter. The Wilson underreamer cutters are so formed that the main body of same projects a considerable distance to each side of the shank of the cutter. These projections form shoulders which are machined to correspond and to rest upon the wedgelike projections on the ends of the prongs or forks of the Wilson reamer body. There are no V-grooves planed in the backs of the Wilson underreamer cutters, such as are found on the backs of the Double cutters, for the reason that they are not needed; there is no occasion for them. The design of the Wilson reamer body is such that when the cutters themselves are collapsed together there is no part of the reamer body itself interposed between the cutters. To collapse them they are simply drawn down until the shoulders on the extended body, or widened body, ride over and below the spreading-bearings or wedge-bearings on the ends of the prongs of the reamer body. The cutter, being suspended on a T, merely swings inwardly from its suspension-means. There being no

(Deposition of Elihu C. Wilson.)

material between the two cutters, that is, no portion of the body itself, there is nothing to prevent the cutters from swinging toward each other as they commence to collapse while riding down the taper-faces of the spreading-bearings of the reamer body. To expand the cutters, the force of the spring draws them up as they bear on the spreading-bearings of the prongs of the reamer body, and the wedge-action together with the taper face of the spreading-bearings finally crowds them out [192] into full expanded position. I think that is all. No; I might add: The upper ends of the Wilson cutters do not come in contact with any angular faces or any angular grooves to in any way assist them to collapse or to expand. There are no such means employed on the Wilson underreamer, and that feature alone makes a very marked difference in the principles of action between the two designs of reamers. Q. 920. Then, to sum up your conclusion, the principles of action of 'Complainants' Exhibit Double Underreamer' and of the device of 'Defendant's Exhibit Wilson Patent,' in expansion and contraction of the bits or cutters, are distinctly different and not substantially the same? Is that your testimony? A. There are very marked differences. Q. 921. (By Mr. LYON.) Will you please answer the question yes or no? Read the question again. (Question No. 920 reread to the witness by the Special Examiner.) Give us a yes or no answer, please. A. They are not the same. Q. 922. and the 'Complainants' Exhibit Double Underreamer'

(Deposition of Elihu C. Wilson.)

and the device shown and described in 'Defendant's Exhibit Wilson Patent' employ distinctly different mechanical principles in the relations and actions of the spreading-portions, thrust-bearings, and inter-engaging dovetails of the bit and body portion, do they?, A. Yes, sir; they do. Q. 923. Is the principle of action of the cooperative parts in the expansion of the bits or cutters of 'Complainants' Exhibit Double Underreamer' and 'Defendant's Exhibit Double Underreamer' different, or the same? A. The means employed to expand or collapse the cutters are virtually the same. Q. 924. They are identical, are they not? A. No, sir. Q. 925. How do they differ? Please note that the question refers to the expansion and contraction of the cutters only. A. The principles are the same. There is a little difference in the division of force employed to obtain the full expansion or collapsion. One depends more on the taper-grooves which incline upwardly and inwardly and in which [193] the cutters travel than the other does. Q. 926. Which one of these two devices depends more upon such taper? A. The later device, I think. Q. 927. 'Complainants' Exhibit Double Underreamer'? A. Complainants' Exhibit Double Underreamer.' Q. 928. When the bits or cutters of a Double underreamer are collapsed, what function does the metal at the bottom end of the underreamer and lying between the bits in collapsed position, perform? A. It acts as a stop, or a retaining-means, an abutment over which the shoulder across the back of the Double cutter en-

(Deposition of Elihu C. Wilson.)

gages or hooks onto that portion of the reamer body, holding the cutters in collapsed position and overcoming the tension of the spring." Is that correct?

Mr. BLAKESLEE,—The same objections.

A. That is correct.

Q. 299. (By Mr. LYON.) In the same deposition when called in rebuttal on behalf of complainants, you were asked the following questions and gave the following answers: "Q. 935. Referring again to 'Complainants' Exhibit Double Underreamer,' if the bits of this reamer were cut away so that that portion of the bits on the inner faces registering with the shanks were not raised above the inner face of the shanks of the bits but continued straight and did not contact at any time with the spreading-surface, would the principle of action of the parts of such underreamer in expanding or collapsing remain the same as now embodied in the exhibit 'Complainants' Exhibit Double Underreamer'? A. I think you are mistaken in your statement that the raised portion of the cutter at the back of the cutter projects beyond the back of the shank of the cutter. The projection or portion of the back of the cutter which comes in contact with the spreading-face of the hollow-slotted extension is in exact plane with the upper end of the back of the shank—back of the upper end of the shank—so that before the material is planed out to form the V-shaped grooves [194] the back of the shank of the cutter is a flat plane. Q. 936. Well, you seem to have identified without difficulty the portion that I have referred to.

(Deposition of Elihu C. Wilson.)

Now, if the portion that I have referred to were cut away so that for the widths of the shank of the cutter there was no contact of the bit at any time with the spreading-surface, would the principle of action of the parts in expanding or collapsing be the same as now embodied in the exhibit underreamer 'Complainants' Exhibit Double Underreamer'? A.

Do I understand you to mean that if this entire bearing point was removed, or only that portion of it which constitutes the back of the shank of the cutter?

Q. 937. That portion which is of the same width as the shank of the cutter. A. A certain amount of the back of the cutter would have to remain in order to give it the full expansion that the cutter has in its normal state. With that portion of the back of the cutter remaining intact, namely, that portion of the bearing which is on the body proper of the cutter and which forms the faces on the body and on the projecting shoulders of the body—if that remained, the cutter would expand to position over the spreading-bearing as now, although its action would probably be modified by reason of the changed position of the lower wall or shoulder of the V-shaped groove lowering the same further down on the shank, Q. 938. You say that the action would be modified.

Would it still be the same principle of action? A. Yes, sir; it would, There would be simply a modification of the amount or extent to which the cutters would be expanded or contracted. Q. 939. Now, again referring to cutting away the portion of the shank of such cutter or bit at the point that you iden-

(Deposition of Elihu C. Wilson.)

tified for me in response to my previous question, and cutting that deep enough so that no portion there would contact, and permitting the contact to come only at the sides of the extension on the body beyond the width of the shank of the cutter, and permitting only those points or shoulders to [195] contact with the end or expanding surface of 'Complainants' Exhibit Double Underreamer,' would such bit then used in 'Complainants' Exhibit Double Underreamer' have the same principle of action in expansion and contraction as is present in said exhibit with the cutters in the form shown in said exhibit, or would it be a different principle of action? A. It would be a different action. Q. 940. Would you say a distinctly different action from that now embodied in 'Complainants' Exhibit Double Underreamer'? A. It would eliminate one of the means now employed by Double as exhibited by 'Complainants' Exhibit Double Underreamer,' to expand the cutters. Q. 941. Then, in your opinion, as a mechanic, it would form a distinct device, would it? A. It would be a different device; yes, sir." Is that correct?

Mr. BLAKESLEE.—The same objection.

A. That is correct.

Q. 300. (By Mr. LYON.) In the same deposition you stated, did you not, in answer to question 970 that: "The means employed to expand the cutters of the double reamer are altogether different from those employed to expand the cutters of the Wilson reamer"?

(Deposition of Elihu C. Wilson.)

Mr. BLAKESLEE.—The same objection.

A. Yes, sir.

Q. 301. (By Mr. LYON.) And in that deposition you testified, did you, that the principles of expansion and contraction of the so-called old style and so-called new style or improved Double reamers remained practically the same, but that “there is a radical difference in the form of construction and the means employed to expand the cutters” in the Wilson reamer of the Wilson patent in suit in this case, offered in evidence in said prior suit and referred to in said deposition as “Defendant’s Exhibit Wilson Underreamer Patent,” as contrasted with either such old style or such improved Double reamer?

Mr. BLAKESLEE.—The same objections as heretofore made, [196] and we further object to this attempt to summarize the testimony, and must insist that if the witness is to put on record again as to the same matters on which he has been put of record, that the exact record be quoted if he is expected to give a yes or no answer. The issues that are involved here pertain to such definite differentiation and comparison that the record should speak for itself as to all these matters and not be built up of abridgments of previous testimony and testimony given in another cause of action.

Mr. LYON.—Let the record show that before answering this question the witness was given full opportunity to read his said deposition on behalf of complainant in rebuttal in said suit of the Union

(Deposition of Elihu C. Wilson.)

Tool Company vs. Wilson & Willard Manufacturing Company, or so much thereof as he desired, in connection with this question, and that his particular attention was called to questions Nos. 963 and 972, and the answers given by him thereto.

A. I testified in substance to that effect; yes, sir.

Q. 302. (By Mr. LYON.) And you stated that such difference between such Wilson reamer and both such so-called old style and such improved or new style Double reamer, was so radical as to give an entirely different principle of action in respect to the principles of expansion and contraction, did you?

Mr. BLAKESLEE.—The same objection.

A. Yes, sir; I so testified.

Q. 303. (By Mr. LYON.) In the same deposition and on redirect examination you were asked: “Q. 1006. Do the lateral extensions of the cutters or bits of ‘Complainants’ Exhibit Double Underreamer’ perform the same or substantially the same functions as the lateral extensions of the Wilson underreamer?” and you answered, “A. They perform a portion of the same functions.” And, reading further from your testimony: “Q. 1007. Are the functions substantially the same? A. A portion of the functions [197] which they perform are substantially the same. Q. 1008. What portion? A. They brace the cutters against the rotary motion which I have previously described; their very existence widens the body of the cutter, which gives more cutting surface to the cutter, increasing

(Deposition of Elihu C. Wilson.)

the strength of the cutter, gives more material in the cutter and, consequently, a longer life. Q. 1009. In their mechanical co-operation with the co-acting surfaces on the body of the underreamers, do the lateral extensions to which you have referred on the cutters or bodies of 'Complainants' Exhibit Double Underreamer' perform the same or substantially the same functions as the lateral extensions of the bodies of the Wilson underreamer? A. I will repeat that they perform a portion of the same functions. Q. 1010. Those are the functions which you have referred to in the previous answer? A. Yes, sir; those are among them. Q. 1011. Any others? A. Yes, sir; by that form of construction the strains on the cutter are better resisted and makes a stronger cutter and gives more bearing surface on the cutter itself and on the body, and, consequently, better enables the reamer to resist the wear. Q. 1012. Do they perform the same or substantially the same functions in the collapsing and contracting of the bodies? A. To a certain degree; yes, sir. Q. 1013. The difference is one of degree, then? A. There is a difference, but it is one of degree, I should say. There is a difference. Q. 1014. Now, as to any analogy between the action of the cutters of 'Complainants' Exhibit Double Underreamer' and the cutters of the underreamer of 'Defendant's Exhibit Wilson Underreamer Patent,' in the expanding and contraction actions, have you anything further to add to your testimony given in cross-examination with respect to the coengagement of the lateral ex-

(Deposition of Elihu C. Wilson.)

tensions or shoulders of the cutters with the lateral extensions upon the body formed by V-notching the body in 'Complainants' Exhibit Double Underreamer'? A. So far as the general forms of construction are [198] concerned, the Double Underreamer cutter as shown by 'Complainants' Exhibit,' lacks only one thing to make it almost identical with the Wilson underreamer cutter and that is the omission of the V-groove across the back of the shank of the cutter. Otherwise the cutters are about the same." Those are correct extracts from your testimony in said depositions, are they, and you gave that testimony, did you?

Mr. BLAKESLEE.—I think you should read the next question and answer, because the answer to this one was not responsive.

Mr. LYON.—You can do that on redirect.

Mr. BLAKESLEE.—The same objections, and the witness is informed that he may look at his deposition and in answering add to it such statement as he may wish.

Mr. LYON.—The procedure of counsel is objected to as an evident coaching of the witness and not the proper proceeding.

Mr. BLAKESLEE.—In such an unusual procedure as the present, the witness certainly is entitled to have before him all that he testified to, that is, his whole deposition in the other case, and that that deposition be considered as a whole; and it is not fair to the witness to pick out from that deposition arbitrarily certain parts of a *large witness* to

(Deposition of Elihu C. Wilson.)

amplify further related parts.

Mr. LYON.—The reason for not offering in evidence the whole deposition of the witness is simply that large portions of the testimony of this witness in such suit of Union Tool Company et al., against Wilson & Willard Manufacturing Company, cannot pertain in any manner to this particular suit or the subject matter of this particular suit, and the witness is entitled to read the whole of his testimony in that connection if he so desires it before answering any question. But your objection is to the conduct of counsel in particularly pointing out to him [199] any particular question or answer and thereby directing his attention to and coaching him to be careful in regard to any particular answer given or to any apparent discrepancy in his testimony then given and as given in this case.

Mr. BLAKESLEE.—Such was not my object, and I ask counsel in all fairness before passing the testimony to the witness to quote the succeeding answer which is necessary in order that the full answer may be given to the question which he has quoted.

Mr. LYON.—My refusal to read into the record the next question is based on the fact that counsel in asking the next question had stated to Mr. Wilson in the former deposition that his question No. 1014 was not with respect to construction, and that the answer given by Mr. Wilson was not as to the subject matter that he then desired, but the answer thus quoted from the answer of this witness to question 1014 as given by the witness is a portion of the

(Deposition of Elihu C. Wilson.)

testimony that we desire, and not with regard to some other subject. If counsel desires to have any other portions of this deposition introduced on re-direct examination he can introduce as many of them as he desires without objection from us.

Mr. BLAKESLEE.—We shall ask that all of this examination on the previous record be stricken out from the record, anyway, on the objections made of record.

Mr. LYON.—It is necessary, in order to use the former testimony and deposition of this witness in impeachment of his present deposition, that the witness be interrogated as to the correctness of such testimony, inasmuch as such former deposition was not signed by him.

A. Yes, sir; that is my testimony. But I believe the answer to question 1014 is based on a misunderstanding of that question. It does not seem to be responsive to the question, and, [200] as I read question 1015, which is a rewording, apparently, of question 1014, I observe that my answer to question 1015 is a more correct one than the answer given to question 1014.

Q. 304. (By Mr. LYON.) The statements, however, contained in such answer to question 1014, as just quoted by me, are correct statements of fact, as you understand the subject matter of such answer, and as you did understand it at the time of giving such answer? Is that correct?

A. So far as the statement of fact is concerned in the answer to question 1014, I will say that substantially it is correct.

(Deposition of Elihu C. Wilson.)

Mr. LYON.—In fairness to the witness I request the notary to copy into the record here at this time the said question 1015 and the answer thereto, referred to by the witness.

“Q. 1015. My question, Mr. Wilson, was not with respect to the construction of the cutter on ‘Complainants’ Exhibit Double Underreamer’ taken by itself, but with respect to the contraction and expansion action and the participation in the same of the lateral extensions or shoulders, upon the cutters of ‘Complainants’ Exhibit Double Underreamer’ with the lateral extensions upon the body of ‘Complainants’ Exhibit Double Underreamer’ formed by V-notching the body at the bottom. As to this participation and strictly in the contracting and expanding actions, have you anything further to add to your previous testimony on cross-examination, completed this morning, qualifying or explaining such participation of such parts and surfaces in such contracting and expanding actions? A. Inasmuch as those parts are in contact with each other during a portion of the contraction and expansion action of the cutters, they unquestionably perform in a measure the same functions that the bearings at the back of the shoulders of the Wilson underreamer-cutter perform when riding on the spreading-bearings of the Wilson underreamer body.” [201]

A. I might qualify my last statement by saying that the substance of the reply to question 1014, while being true, does not seem to be a proper answer

(Deposition of Elihu C. Wilson.)

to the question, as it is not altogether responsive, although in a measure it is.

Q. 305. (By Mr. LYON.) Mr. Wilson, please take Complainant's Exhibit Wilson Patent, being letters patent of the U. S. No. 827,595, herein sued on, and, in conjunction with Figs. 8 and 9 of the drawings thereof and one of the underreamer cutters of Complainant's Exhibit Wilson underreamer and explain to us the relation of the two shoulders 4³ and the position thereof with relation to the portion of such cutters lying between such shoulders.

Mr. BLAKESLEE.—Objected to as not the best evidence. Inspection is the true test.

A. The two shoulders as shown in the drawing of Wilson underreamer patent No. 827,595, Fig. 9, are connected at their lower ends by a continuous plane extending from one shoulder to the other. This was accomplished by the cross-cut of the planer sweeping the full face of the back of the cutter. Our shop practice, as it is now observed, machines the two bearings at the back of the shoulders of the cutter, bearings 4³ by independent operations, leaving those two bearings separate and apart from each other. In the shoulders of the cutters 4³ as shown on drawing Fig. 9, were separated partly from each other by the lower terminus or cutting part of the shank, and were otherwise connected by a continuous plane. The cutter as shown by Complainant's Exhibit Wilson Underreamer is almost, if not quite, completely divided by that portion of the cutter-body which remains between the two

(Deposition of Elihu C. Wilson.)

bearings, and after the two bearings have been machined.

Q. 306. (By Mr. LYON.) In the so-called Wilson underreamers as manufactured by you at the Bakersfield Iron Works or the first reamer manufactured for you at the Baker Iron Works in 1904, as you have stated, or the Wilson reamers manufactured for [202] you by the Wilson & Willard Manufacturing Company, is it a fact that all of the cutters for such reamers have been practically identical with the cutters of Complainant's Exhibit Wilson Underreamer, so far as these bearing-faces (4³) on the inner side of the two shoulders of the cutter, and the metallic portion of the body or shank of the cutter extending between such bearing-faces, and at different planes therefrom, are concerned?

A. It is my recollection that the first cutters that were made for the Wilson underreamer were formed at their backs and that part set forth in the question, more nearly like the drawing shown in the Wilson underreamer patent than as we are now making them as shown in the Wilson Underreamer Complainant's Exhibit.

Q. 307. Now, please answer the preceding question in full.

A. Read the question. (The question is read by the notary.) I think the same can be said of the cutters that were first made by the Bakersfield Iron Works for the Wilson underreamer. And I believe all those that were made by the Wilson & Willard Manufacturing Company are substantially as those

(Deposition of Elihu C. Wilson.)

shown by Complainant's Exhibit Wilson Underreamer.

Q. 308. What has become of the original underreamer that you had made by the Baker Iron Works in 1904?

A. It was sent back to the Bakersfield Iron Works and the body was used up with the other materials.

Q. 309. What has become of the cutters?

A. I don't remember. I suppose they were hauled away as junk, like lots of other materials were.

Q. 310. When was this reamer cut up and when were such cutters disposed of?

A. Probably in 1904-5.

Q. 311. Was it in 1904 or 1905?

A. I can't say. [203]

Q. 312. Please explain to us in detail, using one of the cutters of Complainant's Exhibit Wilson Underreamer by way of illustration, any difference between the formation of these bearing-faces 4³ with relation to the interposed portion of the body or shank there between, as the same exist in one of the cutters of Complainant's Exhibit Wilson Underreamer, and the first Wilson underreamer built for you by the Baker Iron Works in 1904?

A. I have just stated that to the best of my recollection the first cutters made, and which were those made by the Baker Iron Works of this city, were formed at their back very much as the drawing shows in Fig. 9 of Complainant's Exhibit Wilson Underreamer Patent.

Q. 313. That, Mr. Wilson, does not answer the

(Deposition of Elihu C. Wilson.)

question. The question calls for an explanation of what that difference was.

A. The difference is simply this: that in making the first cutters we removed more of the body of the cutter—machining it down to the same plane as the bearings 4³—than we do in machining the Wilson underreamer cutters today.

Q. 314. And that would cut off more of the shank of the cutter, would it?

A. That is not a part of the shank of the cutter. It is a part of the body that remains after machining the bearings 4³.

Q. 315. Did you then leave a shoulder projecting out above or at the line of the said shoulders of the cutter and where the shank joins the body?

Mr. BLAKESLEE.—We object to the arbitrary use of the term “shoulder,” and the question has been answered by reference to the patent and drawings previously.

A. I don't know as I could make it as clear in words as the drawing Fig. 9 shows in the patent, Complainant's Exhibit, and, if you need them, I will repeat substantially the same as [204] shown by Fig. 9 of Complainant's Exhibit Wilson Underreamer patent.

Q. 316. (By Mr. LYON.) In the making of such underreamer at the Baker Iron Works, as you say, in January or February of 1904, is it a fact that such underreamer was constructed from working drawings? A. Yes, sir; I think it was.

Q. 317. Have you those working drawings? If

(Deposition of Elihu C. Wilson.)

so, please produce them.

A. It may be that I have them, although I have not seen those drawings for several years, to the best of my recollection. I may have them somewhere in my files.

Q. 318. Please made a search for them and produce them here before the close of the testimony on behalf of complainant in this case.

Mr. BLAKESLEE.—We object to this request as irrelevant, immaterial, incompetent, not cross-examination, having nothing to do with the testimony produced upon the direct examination of this witness. The patent speaks for itself as to the invention, and the development of the invention in its various stages, and it is not concerned in the issue of infringement which is raised here.

Q. 319. (By Mr. LYON.) At what time during the pendency of your application for the Wilson patent, Complainant's Exhibit Wilson Patent, did you visit the Patent Office at Washington, D. C., and have an interview with the Examiner in charge of your application for said letters patent?

A. I believe I went to Washington during the month of March or April, 1906.

Q. 320. And you saw the Examiner in charge of the examination of your application for said letters patent at the United States Patent Office, did you?
[205]

Mr. BLAKESLEE.—The same objection.

A. Yes, sir.

Q. 321. (By Mr. LYON.) Did you at that time

(Deposition of Elihu C. Wilson.)

have with you one of the bits or cutters of one of your Wilson underreamers? A. I did not.

Q. Did you at any time either personally or through any attorney or agent exhibit to such Examiner of the U. S. Patent Office one of the cutters of your so-called Wilson underreamer during the pendency of said application?

Mr. BLAKESLEE.—The same objection.

A. No, sir.

Q. 323. (By Mr. LYON.) I now show you Complainant's Exhibit Wilson File Wrapper and Contents, and particularly a drawing marked exhibit "A," E. C. Wilson Underreamer, Mail-room, Jun. 18, 1906, U. S. Patent Office, having been endorsed on the back thereof, and ask you if you can state what such drawing is.

Mr. BLAKESLEE.—Objected to as not the best evidence, and the form in which the question is put is improper, this drawing being part of a certified record and speaking for itself.

A. That is a photographic copy of the blue-print, which blue-print was a working drawing of the first Wilson underreamer that was made, and was made by the Baker Iron Works of this city.

Q. 324. (By Mr. LYON.) I note that Complainant's Exhibit Wilson Underreamer does not conform to the drawings of the Wilson Patent Complainant's Exhibit Wilson Patent, particularly in that a T-rod or mandrel has been slotted and the arrangement of the coil spring has been changed to a degree, and the T-rod is mounted by means of a key.

(Deposition of Elihu C. Wilson.)

passing through the slot in the T-rod. When did you first make an underreamer embodying this changed construction?

Mr. BLAKESLEE.—In the first place, this question is objected to as being irrelevant, immaterial, incompetent and not within the issues of this case as defined by the election of the [206] certain portions of the patent sued under; and, furthermore, the question is directed, as counsel for the defendant must well know, to the determination of certain data most vital to the determination of a certain issue now pending between this witness and a client of counsel for the defendant relative to establishing priority of invention involving the key referred to in this question. This is not the proper time to take testimony on the issue of this key and the slot in the spring-actuated rod or T, and the witness is advised that as the question is not pertinent to this issue and as the time for taking testimony and proofs with relation to such key has not arrived, that he need not answer this question unless instructed by the Court.

A. Acting on the advice of counsel, I refuse to answer the question.

Mr. LYON.—We request the certification and return of this deposition, so far as now completed, to the United States District Court for the Southern District of California at Los Angeles, California, immediately, and give notice that we shall bring on for hearing on Monday, March 30, 1914, at the opening of court on said day, or as soon thereafter as

(Deposition of Elihu C. Wilson.)

counsel can be heard, a motion by the defendant for an order requiring the witness to answer this question. And the defendant declines to proceed further with the testimony in this action until such matter is determined, and requests that an adjournment be taken for such purpose.

Mr. BLAKESLEE.—We will proceed with the redirect examination of the witness, and counsel will have an opportunity to further cross-examine the witness.

Mr. LYON.—Any further examination of this witness is objected to as out of order until the cross-examination of the witness is completed. And if the examination of the witness or any other witness in this case is proceeded with, pending this determination, notice is hereby given that we shall move to [207] suppress the same and every portion of the same as out of order.

Mr. BLAKESLEE.—Counsel cannot halt the progress of this deposition because of an unsatisfactory fishing excursion. We shall proceed to more serious pursuits than fishing, and take up the redirect examination of the witness.

Mr. LYON.—Each question asked and answer given is subject to the objection noted on the record without the necessity of hereafter repeating the same, and subject to our motion to strike out the same on the grounds stated, which will be insisted upon. And if the deposition is not certified and returned as requested, the defendant gives notice that he will move to strike out the entire deposition from the record

(Deposition of Elihu C. Wilson.)

and exclude it from consideration on the ground that the notary, acting under instructions from counsel, has refused to make the certificate required as requested by counsel for the defendant.

Mr. BLAKESLEE.—We do not oppose the certification of the record or its return for the purposes of the motion in the least. We simply proceed upon our notice given to go on with this deposition, and do not propose to be interfered with in so doing simply because of the immaterial, incompetent and irrelevant and improper question put to the witness.

Mr. LYON.—That there may be no misunderstanding between counsel, and that it may appear clearly upon the record, I now state that the cross-examination of this witness has not been completed as to any part of his direct examination.

Mr. BLAKESLEE.—We give notice reciprocally to counsel that if the motion introduced is pressed we shall ask an order limiting the cross-examination of the present witness to the record in that respect as it now stands, and shall urge that he has waived his rights to further cross-examination by voluntary termination. The time to complete proofs in this case is short, and if these proceedings can be arbitrarily halted by any such proceeding and motion thereon as has just been made of record, [208] there is no knowing when the record may be completed or whether it may be completed at all. Counsel well knows the condition of the calendar of the Court, and it may be a month before his notice of motion may even be heard.

(Deposition of Elihu C. Wilson.)

Mr. LYON.—And counsel is also aware of the condition of the calendar and the past experience of the Court with the calendar, and the fact that there is slight possibility and no probability of this case being heard at this term of court.

Mr. BLAKESLEE.—That is for the Court itself to determine.

Redirect Examination.

(By Mr. BLAKESLEE.)

Q. 325. Now, with relation to the cutters of complainant's Exhibit Wilson Underreamer and Complainant's Exhibit Wilson Patent and Complainant's Exhibit Improved Double Reamer and Cutters, please compare the bearing-surfaces on the backs of the shoulders of the cutters of the mechanical exhibits with the bearing-surfaces on the backs of the shoulders of the patent exhibit, and state which mechanical formation or arrangement, if either, is more or less like the formation in the patent disclosure.

Mr. LYON.—The further objection is noted to this question that it is leading and suggestive and incompetent and not the best evidence. The exhibits speak for themselves. The question calls for the mere conclusion of the witness and not for a statement of facts.

Mr. BLAKESLEE.—We are asking for a statement of facts, and not for his opinion. We want to show by the measure of his eye what these exhibits show. We wish him to visualize these exhibits.

Mr. LYON.—The objection is repeated.

(Deposition of Elihu C. Wilson.)

A. I should say that the bearings on the backs of the shoulders of the Double underreamer improved type, complainant's exhibit, more closely resembles the corresponding bearings on [209] the Wilson underreamer-cutter, Complainant's Exhibit Wilson patent, as shown in Figure 9. This is for the reason that there is very little of the space at the back of the body of the Wilson underreamer-cutter, Figure 9, as disclosed by Complainant's Exhibit Wilson Underreamer Patent, that is not a continuous plane or a continuous surface. The same can be said of the back of the cutter of the Double underreamer improved type, Complainant's Exhibit. That cannot be said of the Wilson underreamer-cutter of Complainant's Exhibit Wilson Underreamer Cutter, as in that case the bearings 4³ are entirely separated by a portion of the metal or body of the cutter which was not displaced when machining the bearings 4³.

Q. 326. (By Mr. BLAKESLEE.) And with relation to this portion of the metal which was not displaced in planing the back of the cutters of Complainant's Exhibit Wilson Underreamer to produce the bearing-faces on the backs of the shoulders, what have you to say with respect to the groove in the back of the bearing-faces back of the cutter of Complainant's Exhibit Improved Double Reamer and Cutters?

Mr. LYON.—Objected to on the further grounds that it is leading and suggestive.

A. The groove at the back of the Double underreamer, Complainant's Exhibit Improved Double Underreamer, partly divides that bearing into two

(Deposition of Elihu C. Wilson.)

separate bearings or faces. In that regard the grooves produce a similar result with the Double underreamer-cutter, improved type, that is produced on the Wilson underreamer as shown by the drawing Figure 9, Complainant's Exhibit Wilson Underreamer Patent, by leaving a portion of the body intact and interposed between the two bearings 4³. It will be clear that in each case a portion of the face or bearings at the backs of the cutters are divided into two separate faces.

Q. 327. (By Mr. BLAKESLEE.)—Now, will you please draw [210] the cutters of Complainant's Exhibit Improved Double Reamer and Cutters, down into the positions which they assume when contracted, and tell us whether they are then held in rigid relation to each other or what their relation in such position is.

Mr. LYON.—The question is objected to for the reason that there is no proof whatever that the said cutters are a pair of cutters manufactured by the defendant in this case, or that they are a pair of cutters, and on the further ground that the operative parts of this reamer are not produced and that the guess of the witness in answer to this question must be mere speculation; and on the further ground that his testimony is incompetent and that no foundation is laid, the witness not having qualified to answer this particular question in relation to this particular reamer or pair of cutters.

Mr. BLAKESLEE.—We stand upon the record and the stipulation as made, and also more or less

(Deposition of Elihu C. Wilson.)

upon the acts of the counsel as reflected in the previous objection that this suit rests more upon the cutters and, I suppose, the parts co-operating therewith, judging from his cross-examination, it is upon complete underreamer organization. We think the witness is capable of bringing the cutters into the position requested without further qualification, and I will ask him to do so and state what their relation is in such position.

Mr. LYON.—Counsel should not fall in error as to the character or scope of claim 16 or claim 17 of the Wilson patent in suit, due to any cross-examination of this witness by counsel for the defendant, which cross-examination has been conducted for the purpose of clarifying the testimony of the witness in regard to the general operation and construction of the so-called old style Double and so-called improved Double reamers, and the comparison of the underreamers as a whole with the underreamer as a whole as illustrated and described in the patent in suit, [211] Complainant's Exhibit Wilson Patent. The cross-examination has been conducted in that regard to meet the apparently erroneous theory of counsel for the complainant.

Mr. BLAKESLEE.—We must contend for consistency that counsel for defendant's theory seems to be erroneous with respect to the charge of infringement being pressed, and therefore, apparently cannot agree with him as to the construction placed upon those claims. However, that has nothing to do with the competency of the present witness to manu-

(Deposition of Elihu C. Wilson.)

ally manipulate these cutters, and we think he can do so and will again ask him to do so.

Mr. LYON.—Counsel for the complainant's last remarks show the necessity of the cross-examination of this witness as to the general comparison of the said so-called old style and improved Double reamers with Complainant's Exhibit Wilson Patent as a whole.

A. The Double underreamer, improved type, Complainant's Exhibit, has cutters which are suspended in the reamer body by means of a key or a single piece of metal which extends through slots in the shanks of the cutters, and which key, in turn, is suspended on a spring-actuated rod or mandrel which lies through the central bore or axis of the reamer body. To collapse the cutters preparatory to running the reamer into the casing a rod having a thread on one end and, customarily, an eye at the other, is screwed into place in a hole drilled and tapped to fit the threaded end of the eye-rod or rod having the eye on it. By drawing this eye-bolt or eye-rod downwardly, after it has been fixed in place in the lower end of the spring-actuated rod, the spring is compressed and the tension on the cutters is immediately released and the cutters hang loosely suspended on the key to which they are attached. When this spring has been compressed to its fullest extent, namely, to a point where the key to which the cutters are attached strikes and bears against the lower end of the slot in the reamer body in which the key plays, the cutters [212] can be collapsed together by

(Deposition of Elihu C. Wilson.)

swinging them inwardly to the fullest extent. There is nothing to prevent them from swinging in or swinging out to their fullest limit, and there is nothing to prevent the insertion of a rod and eye-bolt between the cutters and into the spring-actuated rod as before described. Their outward motion, as in the case of the Double underreamer, improved type, Complainant's Exhibit, leaves a space between the cutters of not less than $2\frac{1}{2}$ to $2\frac{3}{4}$ inches, which is a great deal more space than is required to admit the threaded rod.

Q. 328. (By Mr. BLAKESLEE.) Among the miscellaneous objects on the floor here not in evidence, do you see anything which resembles such threaded rod and the eye-bolt that you have been talking about?

Mr. LYON.—Objected to as leading.

A. I do.

Q. 329. (By Mr. BLAKESLEE.) I should judge there are some fifteen miscellaneous objects on the floor, and I wish you to select from them any such thing if you find it there.

A. This rod here which has a thread at one end of it and the opposite end being rounded into the form of a ring, is the piece which I described, and the same piece is shown in Double Underreamer Patent 734,833 wherein the eye-bolt 28 is seen mounted in position in this spring-actuated rod in figure 1 of the drawings.

Q. 330. Now, with the cutters in the collapsed position and spaced apart as you have last testified,

(Deposition of Elihu C. Wilson.)

please state whether or not there is sufficient space for the introduction of this eye-bolt in working position without its contacting with the cutters at any points.

Mr. LYON.—Objected to as leading, and upon the further ground that it is incompetent, no foundation laid, the witness not having been qualified to answer the question with relation to the particular exhibits referred to, and upon the ground that [213] such exhibits are not themselves shown to be related to the same subject matter, there being no proof of identity of the particular cutters referred to as ever having been made or used in this particular reamer; and the other part of the reamer not being produced, it is mere speculation on the part of the witness.

A. When the cutters referred to are drawn downwardly to their fullest collapsing position, and swung apart as they would swing by gravity, there is ample room to insert the eye-bolt referred to.

Q. 331. (By Mr. BLAKESLEE.) And with such ample space provided, what is the relation of the eye-bolt to the grooves cut in the bearing-faces on the backs of the bodies of these cutters which you have testified about?

Mr. LYON.—Objected to as assuming facts not appearing in the testimony of the witness from the record in this case or from the exhibits themselves, and as pure speculation, and as irrelevant and immaterial.

A. The grooves are not necessary in order to insert the eye-bolt in place in the spring-actuated rod or mandrel.

(Deposition of Elihu C. Wilson.)

Q. 332. (By Mr. BLAKESLEE.) Would the rod touch the walls of the groove or not?

Mr. LYON.—The same objection as last noted in the record.

A. They would not.

Q. 333. (By Mr. BLAKESLEE.) Now, leaving this particular reamer and these cutters, roughly, how many reamers and cutters of the improved type of Double reamer have you seen?

A. I have seen scores of them.

Q. 334. Have you seen the cutters of any of those reamers drawn down in collapsed position?

Mr. LYON.—Objected to as leading.

A. Yes, sir; I have.

Q. 335. (By Mr. BLAKESLEE.) How did the space between [214] them compare with the space between these cutters, and the position in which you have drawn them?

Mr. LYON.—Objected to as calling for the conclusion of the witness and not for a statement of facts, and as incompetent and not the best evidence, the witness not having qualified to answer the question.

A. With the reamers of the same size there would be little or no difference in the spacing.

Q. 336. (By Mr. BLAKESLEE.) Have you seen those eye-bolts holding down the cutters of such reamers?

Mr. LYON.—Objected to as leading.

A. I have.

Q. 337. (By Mr. BLAKESLEE.) How do they

(Deposition of Elihu C. Wilson.)

compare in dimensions with the eye-bolts you have referred to here?

Mr. LYON.—The same objection as to the next to the last question stated on the record.

A. The eye-bolts vary in size to accord with the size of the underreamers with which they are being used, and the eye-bolts 4-inch or 4 $\frac{1}{4}$ inch underreamers are, in a general way, probably the same size as these which we have before us, and for larger reamers are possibly somewhat thicker, but only very slightly heavier.

Q. 338. (By Mr. BLAKESLEE.) What do you suppose the tensile strength of that eye-bolt is?

Mr. LYON.—Objected to as irrelevant, immaterial and incompetent no foundation laid, the witness not having qualified to answer the question.

A. That eye-bolt would probably stand a tensile strain of six or seven thousand pounds.

Q. 339. (By Mr. BLAKESLEE.) And what is the tensile strength imparted by such a spring as is used in a reamer of this type and size when put under full contraction? [215]

Mr. LYON.—Objected to as incompetent, no foundation being laid, the witness not having qualified to answer the question and that it is a pure guess and conclusion of the witness. And I call the Court's attention to the fact that the witness has not produced, nor has he testified that he has ever seen the spring that was used in Complainant's Exhibit Improved Double Reamers and Cutters, and that it is irrelevant and immaterial, the tensile strength of

(Deposition of Elihu C. Wilson.)

such rod having nothing to do whatever with the fact as to the size of rods used by complainant in these reamers.

A. The extreme strength of the spring for 6-inch Double underreamers, improved type, would probably be from 1000 to 1500 pounds.

Q. 340. (By Mr. BLAKESLEE.) In testifying under cross-examination that the cutters of the Double underreamers are expanded by spring-actuated rods, did you testify from observation or hearsay?

Mr. LYON.—Objected to as leading.

A. From observation.

(Pursuant to the request of counsel for the complainant, an adjournment is now taken until Tuesday, March 31, 1914, at 10 o'clock A. M., at the same place.) [216]

United States of America,
State of California,
County of Los Angeles,—ss.

I, I. Benjamin, a notary public in and for the county of Los Angeles, State of California, duly commissioned, sworn, and qualified to administer oaths, etc., do hereby certify that the witness in the foregoing deposition named, to wit, Elihu C. Wilson, was by me duly sworn according to law to testify the truth, the whole truth, and nothing but the truth. That the said deposition was taken at the time and place agreed upon by stipulation of solicitors for the respective parties, beginning on Tuesday, the 24th day of March, 1914, at the office of solicitor for

complainant, at 10 o'clock A. M. of said date, and thereafter from day to day to and including Friday, the 27th day of March, 1914. That pursuant to the request of counsel for the defendant made on the record, I hereby certify and return the deposition of the said witness, Elihu C. Wilson, and hereby certify that the foregoing is a full, true and accurate transcript of such deposition.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on this 30th day of March, 1914.

[Seal]

I. BENJAMIN,
Notary Public in and for Los Angeles County, State
of California.

[Endorsed]: No. A-4—Equity. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Proofs Taken on Behalf of Complainant. Filed Dec. 18, 1914. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. [217]

Friday, April 3, 1914,
10 o'clock A. M.

This being the time and place to which by consent of counsel heretofore entered into the further taking of proofs was continued, by agreement of counsel a further continuance is now taken until to-morrow, Saturday, April 4, 1914, at the same place, to wit, the office of Raymond Ives Blakeslee, Esq., solicitor for complainant.

Saturday, April 4, 1914,
10 o'clock A. M.

This being the time and place to which the further taking of proofs was continued, the proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

ELIHU C. WILSON, recalled.

Mr. BLAKESLEE.—The redirect examination of the witness E. C. Wilson is now terminated, and the witness is here and ready for recross-examination.

Mr. LYON.—The cross-examination of the witness not having been completed, as heretofore stated on the record, defendant stands on its motion and notice; and, upon a ruling by the Judge of this court on defendant's motion to compel the witness to answer the question which he refused to answer under advice of counsel, the cross-examination will be completed.

Mr. BLAKESLEE.—The complainant stands upon the motion of record noticed for the same time as the motion referred to by defendant's counsel, to limit the cross-examination of the present witness to the present record in that respect. The present witness is excused, subject to recall if found necessary or desirable. [218]

Deposition of W. W. Wilson, for Complainant.

W. W. WILSON, a witness produced on behalf of complainant, being duly sworn, testifies as follows:

Direct Examination.

(By Mr. BLAKESLEE.)

Q. 1. Please state your full name, age, residence and occupation.

A. William Webster Wilson; age, thirty-two years; residence, 1270 Western Avenue, Los Angeles, California; vice-president of the Wilson & Willard Manufacturing Company.

Q. 2. State briefly, please, what training, practical and academic, you may have had in matters scientific and mechanical.

A. Bachelor of Arts in electrical engineering, Stanford University, together with a half year post-graduate course along the same line; I have done mechanical draughting and machine design for the Bakersfield Iron Works two years, off and on, and more or less of the same work for different parties on small jobs; I have been connected with the Bakersfield Iron Works for about a year and a half, in charge of its various branches, and later on was connected with the Wilson & Willard Manufacturing Company for about four years and a half as chief accountant, superintendent of the shop and vice-president. I have been connected with the Columbia Oil Company and spent a considerable portion of my time while with the Bakersfield Iron Works in the oil fields in that vicinity in connection with design and operation of different oil well tools.

(Deposition of W. W. Wilson.)

Q. 3. During that experience have you come in contact, to any particular extent, with oil well tools known as underreamers?

A. Yes, sir. I did a large part of the designing, draughting and manufacturing of the Wilson underreamer as it [219] was brought out and developed at the Bakersfield Iron Works, and later on at the Wilson & Willard Manufacturing Company's plant, and to that end have made careful study of all of the makes of underreamers that I have been able to find.

Q. 4. Are you acquainted with the construction and mode of operation of underreamers known generally in the trade and field as Double underreamers?

A. Yes, sir.

Q. 5. Do you know by whom this type or make of reamers is produced? A. Yes, sir.

Q. 6. By whom?

A. The Union Tool Company.

Q. 7. Have you seen the Double underreamers and the Wilson underreamers that you have referred to in operation or in use or being put into use in the oil fields? A. Yes, sir.

Q. 8. Have you ever given any previous testimony in any litigation regarding underreamers?

A. Yes, sir.

Q. 9. If so, in what suit or suits?

A. In the suit pending in this court entitled The Union Tool Company et al., against Wilson & Willard Manufacturing Company, Circuit Court No. 1540.

(Deposition of W. W. Wilson.)

Q. 10. Have you ever given testimony in any other patent litigation with regard to oil well tools?

A. Yes, sir; the suit of Hardison et al. vs. Raine, involving a casing perforator, which suit was brought before and determined in this same court.

Q. 11. I show you Complainant's Exhibit Wilson Patent and ask you if you are familiar with the contents and disclosure of the same. [220]

A. I am.

Q. 12. In the previous suit concerning underreamers which you have testified about, did you consider and testify with respect to this patent?

A. Yes, sir.

Q. 13. Do you fully understand the construction and mode of operation and method of use and interrelation of parts and features of the subject and disclosure of this patent?

Mr. LYON.—Objected to as leading and calling for a conclusion of the witness and not for a statement of fact.

Q. 14. (By Mr. BLAKESLEE.) I will withdraw the question. Please state how fully you understand the disclosure of this patent and in what respect.

A. I have gone carefully over the contents of this patent many times and have testified carefully on the same in the suit previously mentioned as The Union Tool Company et al. vs. The Wilson & Willard Manufacturing Company.

Q. 15. I now call your attention particularly to those parts of the underreamer disclosed in Com-

(Deposition of W. W. Wilson.)

plainant's Exhibit Wilson Underreamer, which are referred to therein, as, for instance, in line 71, page 1, as "cutters," and I will ask you to state in your own language the construction and formation of the same, together with the construction and formation of any other parts and features of the reamer with which these cutters may co-operate in the use of the reamer.

Mr. LYON.—The question is objected to in so far as it involves anything other than the cutter or bit itself, on the ground that complainant having stated that only Claims 16 and 17 of the Wilson Patent No. 827,595 are claimed to be infringed, and such claims are for an underreamer-cutter as an article of manufacture, the other portions of the underreamer or the mode of operation or coaction of any thereof with the underreamer-cutter [221] are irrelevant and immaterial to the issues of this suit, as said Claims 16 and 17 are limited to the underreamer-cutter *per se*, and are not combination claims involving any combination of an underreamer-cutter or the body portion or spreading-bearings or thrust-bearings of the reamer.

Mr. BLAKESLEE.—Complainant reiterates the position heretofore taken in this action as of record, namely, that this patent is for an underreamer and the subjects of Claims 16 and 17 are for underreamer features and not as differentiated by Section 4886, Revised Statutes, simply and distinctly and separately for an article of manufacture. The election to stand upon Claims 16 and 17 was carefully

(Deposition of W. W. Wilson.)

made conjointly with reference to the other portions of the disclosure of the patent with which the subject of such claim are necessarily related; and the Court's attention is again called to the fact that counsel has gone very extensively in cross-examination of the previous witness into the features of the underreamers concerned in this issue other than the cutters *per se*. It is not seen that this objection is consistent with the position taken by counsel as heretofore reflected by the record.

Mr. LYON.—If the examination of this witness is limited on direct to matters in issue, to wit, the underreamer-cutter, the cross-examination will be so limited.

Mr. BLAKESLEE.—The question speaks for itself and we shall expect cross-examination to follow the scope of the direct examination.

A. The underreamer cutter disclosed in the Wilson Underreamer Patent No. 827,595, Complainant's Exhibit Wilson Patent, is disclosed in drawings in Figures 7, 8 and 9, and in Figures 1, 3, 2 and 4 are shown in position in the underreamer body. The cutter consists of a long narrow part 4' known as the cutter-shank, below which and being the solid part therewith is [222] an enlarged portion shown at 4, usually designated as the body of the cutter. On the sides of the shanks are bearing-shoulders 4². At the upper end of the shank on the inner face shown in full in Figure 9 at 18 there is a recess for the reception of spring-actuated means. On the outside of the shank there is a shoulder shown in Figures 7 and

(Deposition of W. W. Wilson.)

8 at 30 for the purpose of contacting with the lower end of the casing or pipe 40 as shown in Figure 3 to effect collapsing of the cutters on the withdrawal of the reamer from the hole. Below the shank on the body there is an expansion-bearing face 4³, which face contacts on suitable faces on the reamer body to cause expansion and contraction of the cutters. At the very lowest point of the cutter, shown in Figure 8, not marked in the drawing, is an edge, which edge is usually known as the cutting edge and is that part of the cutter which is used to cut or impact with the earth in the underreamer.

Q. 16. Please state more particularly the functions or offices of the particular parts of the cutter which you have described, irrespective of the shank portion, and what results follow from the use of these cutters, both as to their service and as to maintaining of the cutters in serviceable condition.

Mr. LYON.—The same objection as noted to the preceding question.

A. The great width of the part 4 permits the cutter to ream a comparatively large part of the circumference of the hole at each stroke, and, therefore, making for faster reaming and more certain reaming of the entire circumference of the hole. The placing of the bearing-faces 4³ in the body of the cutter, as shown, produces a substantial bearing-face at the outer portion of the cutter body more firmly and securely bracing the cutter against strains caused in use, particularly those applied on one side of the cutter or tending to have a twisting action on the cut-

(Deposition of W. W. Wilson.)

ter body. The placing of the expansion-bearing face 4³ low [223] down on the cutter body permits the cutter to be braced at a point more in line with the cutting edges of the cutter, thus placing a reduced bearing action on the cutter-shank than would be the case were this bearing placed higher up. The enlargement of the cutter at this point permits the placing in this portion of the cutter a greater quantity of metal, which makes for longer wear and greater ability to stand abuse. The placing of expansion-bearing face on the cutter body permits a longer projection of the cutters below this point to be used, thus making for longer wear and permitting the cutter to be dressed more times before it is worn out.

Q. 17. (By Mr. BLAKESLEE.) What effect upon the cutting action or cutting arrangement of the cutter does the provision of the lateral enlargements or shoulders thereof in the cutters of the Wilson patent have?

A. This lateral enlargement of the body of the cutter over the shank as shown in Figure 9 of the patent permits an increased width of cutting face on the cutter when in reaming position, as shown in Figure 4, which causes the cutting face to embrace more of the entire circumference of the cutting circle, causing the reamer to ream more at each stroke of the tool, which makes for faster reaming and more certain reaming. The great difficulty found with narrow cutters was that they tend to start a key-seat in the hole or grooves down the side of the hole in which the cutters work, preventing the reamer from rotating and pre-

(Deposition of W. W. Wilson.)

venting a complete reaming of the hole, thus preventing the possible lowering of the pipe past this point. In order to overcome this, the tools are fed very slowly with the narrow cutter reamer so as to make as sure as possible that the cutters have engaged the entire circumference of the hole at the point where the reaming is in progress.

Q. 18. Has there been to your knowledge more than one type of Double underreamer used in the fields? [224] A. Yes, sir.

Q. 19. With how many such types are you familiar? A. Two definite types have been produced.

Q. 20. How are these types known or how have they been known in the field, if by any particular designation?

A. They have usually been designated by the drillers as the "Old style Double underreamer" and the Double improved underreamers.

Q. 21. Have you recently seen in the fields either of these types of Double underreamers?

A. I have recently seen in the fields many of the Double improved underreamers.

Q. 22. Have you recently seen any of the old style Double underreamers in the fields?

A. No, sir.

Q. 23. During how many years, approximately, does your experience extend in the observation of Double underreamers on the market and in the fields? A. During the past seven years.

Q. 24. During that period, roughly speaking, what has been the ratio of the number of old style

(Deposition of W. W. Wilson.)

Double underreamers that you have seen and the number of improved Double reamers which you have seen?

Mr. LYON.—Objected to as incompetent and immaterial.

A. Nearly all of the Double underreamers that I have seen in that time were Double improved underreamers. The only old-style underreamers that I have seen have been those underreamers usually in the scrap heaps about the oil fields and the iron works near the same.

Q. 25. (By Mr. BLAKESLEE.) What parts of said scrapped old-style Double underreamers did you see in such heaps?

A. The lower portion of the body, the body and cutters. [225]

Q. 26. What was the condition of the cutters?

A. More or less worn and rusty.

Q. 27. And were they still intact?

Mr. LYON.—Objected to as leading.

A. Yes, sir; so far as I remember.

Q. 28. (By Mr. BLAKESLEE.) Did you ever observe particularly as to this?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 29. (By Mr. BLAKESLEE.) When did you first see a so-called improved Double underreamer, approximately?

A. I believe it was in 1907, about June or July.

Q. 30. Do you remember where it was?

A. Yes, sir; in some of the oil well supply stores at

(Deposition of W. W. Wilson.)

Bakersfield, California.

Q. 31. Will you please compare the entire leading aspects and cutter of the old-style Double reamer with the cutter of the improved Double reamer?

Mr. LYON. The question is objected to as calling for a conclusion of the witness and not for a *statement of facts*.

A. The old-style Double underreamer cutter differs from the new style Double underreamer cutter in general by the relative amount of metal contained in the shank and body of the cutters, there being comparatively longer metal in the shank of the old-style Double underreamer cutter than the new, and, conversely, less in the body of the old-style than in the new style cutters. The dovetails of the old-style Double underreamer cutter differ from those of the new in that there are a number of auxiliary dovetailed shoulders at the lower portion of the shank which are not found on the new style or improved Double underreamer cutter. The bearing-face at the top of the old-style Double underreamer cutter differs from that of the new style in that it is at right angles or nearly so to the plane [226] of the outer dovetail faces, while that face on the Improved Double underreamer cutter slopes downwardly and outwardly in relation to the plane of the outer dovetail faces. The upper face of the cutter body which is caused by the removal of the metal to produce the dovetails, differs in its angularity to the improved Double underreamer cutter in that the face on the old style is nearly horizontal, while this face on the

(Deposition of W. W. Wilson.)

improved Double underreamer cutter slopes downwardly and outwardly. The bearing face on the inside of the old-style Double underreamer cutter differs from that of the new style Double underreamer cutter in that it is wholly and entirely upon the shank of the cutter in the old-style, while in the new style this bearing-face has been brought down so that it is largely upon the inner face of the body of the cutter and extends outward upon the laterally-extended portions of the cutter body.

Mr. LYON.—It will be noted on the record that in giving this answer so far as the witness has referred to Complainant's Exhibit Improved Double Reamer and Cutters, Complainant's Exhibit Old Style Double Reamer and Cutter No. 1, and at this point refers to Complainant's Exhibit Wilson Patent.

Mr. BLAKESLEE.—We will admit that he is inspecting the exhibit, but we do not take it that he is definitely referring to these exhibits. The answer, we take it, is responsive to the question so far, and while these exhibits are before him, it is to be assumed that the answer is with respect to the Double underreamer cutters as he is acquainted with them, as indicated by his previous testimony.

Mr. LYON.—The statement of counsel for Complainant is objected to for the reason that the witness in answering the question has thus far continuously handled the said exhibits and made his comparisons directly therefrom, bending over the said exhibits as they were on the floor before him. [227]

Mr. BLAKESLEE.—We still contend that he is

(Deposition of W. W. Wilson.)

not referring, however, in his answer, by limitation to these exhibits. We concede that he has them before him and is inspecting them as he answers.

A. It is to be noted that the witness was not informed that he was not to refer particularly to any exhibits. However, I could have made the answers without so doing, if necessary. The bearing-face or expansion-bearing at the back of the cutters differs from the old-style Double underreamer cutter from that of the new or improved style Double cutter in that there is a partial cutting away on this face on the improved underreamer cutter near the center thereof in *in* a vertical line, by means of a rounded cavity which divides its bearing-face into two parts, while upon the old-style underreamer cutter no such notch appears. The body of the cutter on the old-style Double underreamer cutter maintains the same or nearly the same width as that measured across the extreme outside edges of the supplementary dovetails. The body of the cutter in the Double improved underreamer cutter extends laterally considerable distance beyond the outside edges of the dovetails on the shank of the cutter, thus producing a definite widening of the cutter body as compared with the shank. The placing of the cutter-expanding bearing down upon the body of the cutter permits a more stable supporting of the cutter against the underreamer body or parts thereon than is the case in the old-style Double underreamer cutter where the same is placed upon the shank solely. The increased width of the cutter caused by widening of the

(Deposition of W. W. Wilson.)

body of the *improve* Double underreamer cutter makes a better underreaming cutter than the old-style, for the reason that it embraces more of the circumference of the circle produced thereby.

Q. 32. (By Mr. BLAKESLEE.) Please compare the improved Double reamer cutter with the old-style Double reamer cutter with respect to its length of life. [228]

A. The length of life of the improved Double underreamer-cutter is greater than that of the old-style Double underreamer cutter for the reason that there is less chance for breakage of the improved cutter, due to the fact that the cutter-expanding-bearing is placed down upon the body of the cutter, thus better supporting the cutter against sidewise rotation, and also relieving a great amount of strain from the cutter-shank when in reaming operation by reason of the fact that the cutter-faces are braced against collapsing at a point more nearly in line with the pressure exerted thereon. Also, there is more metal in the body of the cutter of the Double improved underreamer than in the body of the cutter of the old-style Double underreamer, which permits the cutter to be dressed out more times before the body of the cutter is reduced to such a point as to become worthless. Also, the improved Double underreamer-cutter should have longer life than the old-style Double underreamer-cutter by reason of the fact that the increased width of the cutter body permits a wider space of cutting face thereon and, therefore, a greater distribution of the points where the impact

(Deposition of W. W. Wilson.)

of the cutter meets the rock or hard formation in the hole, thus causing less wear at any one particular point thereon.

Q. 33. You have testified that a portion of the stress exerted upon the shank of the improved Double reamer cutter is taken by the lateral enlargements of the body of the cutter. What effect does this have, if any, with respect to the dimensions of the shanks of the cutter or dimensions of the shanks so permitted.

Mr. LYON.—Objected to as leading and suggestive.

A. In the old-style Double underreamer-cutter the sole means of prevention of rotation of the cutter in the body are upon the shank of the cutter, thus requiring a large width of [229] shank proportionally, and very strong dovetails to support its action. In the improved Double underreamer-cutter with cutter-expanding-faces on the outer edges of the body of the cutter, the increased widening of the bearing of the cutter against the body of the cutter, being more in line with the points of pressure, tend to very strongly support the cutter against rotative action independent of any support given thereto by the cutter-shank, which permit smaller and fewer dovetails to be used and also of the narrowing of the cutter-shanks.

Q. 34. (By Mr. BLAKESLEE.) By what part of the cutter of the Double improved underreamer is the up-thrust or upwardly directed stress imparted to the body of the reamer?

(Deposition of W. W. Wilson.)

A. The downwardly and outwardly inclined face at the very top of the cutter-shank.

Q. 35. Will you please now compare the cutter of the improved style Double under-reamer with a cutter of Complainant's Exhibit Wilson Patent, as to the leading features thereof.

A. Both underreamer cutters consist of an enlarged portion or body surmounted by a narrower portion or shank. In the shank of the Wilson under-reamer-cutter is a pocket 18 cut part way through the cutter for the reception of the spring-actuated means. In the Double underreamer-cutter there is a slot cut completely through the cutter-shank for the reception of the spring-actuated means. Upon the shanks of both the cutters there are shoe-notched faces, the same as designated at 30 in the Wilson underreamer patent. Upon the sides of the shanks of the Wilson underreamer-cutter and the Double underreamer-cutter are ribs for engagement of suitable members on the lower portion of the under-reamer body. The cutter-expanding faces on both cutters are placed on the upper inner face of the cutter body, and in both cutters extend to the widest dimensions of the cutter body. In both underreamer-cutter a large amount of metal is present [230] in the body part of the cutter as compared with that in the shank. In the Double underreamer improved cutter the cutter-expanding base is divided into two parts by a rounded cavity at its center. In both cutters the cutter-expanding bearing-faces are placed as near as possible in line

(Deposition of W. W. Wilson.)

with the cutting edges, that is, down as low as possible on the inner face of the cutter body. In the Wilson underreamer-cutter the face of the shank shown in Figure 9 is continuous and unbroken except by the pocket 18. In the Double underreamer-cutter this face is broken by the slot cut clear through the cutter-shank for the reception of suitable spring-actuated means, and also by a large V-notch cut in the cutter-shank to permit the cutter to collapse over the lowest portion of the underreamer body. The horizontal face of the Wilson underreamer-cutter is shown just above the rounded portion 16, being at the top of the cutter body, and also the face of the extreme top of the cutter-shank, are at right angles to the plane of the dovetails or to a vertical line which constitutes the axis of the underreamer body when the cutters are expanded. These shoulders in the Double improved underreamer-cutter slope slightly downwardly and outwardly.

(By consent of counsel an adjournment is now taken until Saturday, April 11, 1914, at 10 o'clock A. M., at the same place, to wit, the office of Raymond Ives Blakeslee, solicitor for complainant.)

[231]

Office of Raymond Ives Blakeslee,

Saturday, April 11, 1914, 10 o'clock A. M.

This being the time and place to which the further taking of proofs on behalf of complainant was con-

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tinued, proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,

Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

W. W. WILSON, recalled.

Direct Examination (Resumed).

(By Mr. BLAKESLEE.)

Q. 36. Will you please particularly compare the disclosures of Complainant's Exhibit Wilson patent with a cutter or the cutters of "Complainant's Exhibit Improved Double Reamer and Cutters," but only as to such latter exhibit with respect to the cutters themselves, and the co-operating features upon the body of the exhibit reamer.

Mr. LYON.—The question is objected to on the ground that in so far as the question calls for any comparison of the body portion of Complainant's Exhibit "Improved Double Reamer," the same is irrelevant and immaterial to the issues of this suit.

A. The cutters shown in Figures 7, 8 and 9 of "Complainant's Exhibit Wilson Patent" are similar to the cutters in "Complainant's Exhibit Improved Double Underreamer and Cutters" in the following particulars: That they both consist of a shank or narrow portion below which is a larger or wider portion or body-portion 4 which widens abruptly from the shank portion of the cutter as shown at the shoulder 16 of the patent. Upon the inner face of the cutters there is a bearing surface 4³ which in the Wilson patent contacts with two widely separ-

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ated spreading-bearings and in the Double improved underreamer-cutter contacts with two separated spreading-surfaces by reason of the notch or circular groove cut in the center of this bearing upon the cutter. On [232] both cutters there are dovetail shoulders 4² in the patent. However, in the Double improved cutters shown in the exhibit, these dovetail shoulders are merely divided into two parts by reason of the notch cut into the shank of the cutter. This notch has no counterpart in the Wilson underreamer-cutter. The enlarged portion 4 of the Wilson underreamer-cutters and the similar enlarged portion or body portion of the Double improved cutters permits a large quantity of metal in both cases to be placed in this portion so as to permit long wear and repeated dressing. Both cutters are provided with a shoulder or shoe-notch 30, to assist in their collapsing. The Wilson underreamer-cutter has near its upper end a recess 18, for the reception of the spring-actuated means. The improved Double underreamer-cutter has near its upper end a slot cut completely through the shank for the reception of the spring-actuated means. In both cutters the inner bearing-faces 4³ contact with the body at the extreme outer edges of the cutter-body, 4, which points are much further apart than any points on the cutter-shank.

Q. 37. (By Mr. BLAKESLEE.) Please a little further compare the cutters of the Complainant's Exhibit "Wilson patent" and the cutters of the im-

(Deposition of W. W. Wilson.)

proved Double reamer exhibit, with respect to the location of the in-thrust bearings.

A. In both of the underreamer-cutters shown in the patent and in the improved Double underreamer-cutter the in-thrust bearings are located upon the enlarged portion of the cutter or body as shown at 4 in the patent, the location being the overhanging edges or parts of the body extending laterally beyond the shank in the Wilson Underreamer-cutter and also on the Double underreamer-cutter.

Q. 38. What can you say with respect to any other stresses which are taken care of by the engagement of the cutters at their body portions in both of these exhibits with the bodies [233] of the respective reamers, when the cutters are in expanded positions?

Mr. LYON.—Objected to on the ground that it is irrelevant and immaterial in view of complainant's election to stand upon claims 16 and 17 of the patent in suit, no charge of infringement being made by the defendant of any other claims of the patent in suit.

Mr. BLAKESLEE.—The previous record shows our position and contentions in this respect.

A. The cutters in both cases in drilling operations have pressures applied to them to cause them to be forced upwardly and inwardly, and, in some instances, outwardly, on the cutter body. The surfaces of the cutter bodies at the upper edge of the shoulder 16 is shown in the Wilson patent to contact with thrust-bearings 10', to assist in taking the up-

(Deposition of W. W. Wilson.)

thrust of the cutter body. This is shown to be done in exactly a similar manner on the cutters of the Double improved underreamer. The in-thrust face 4³ in both instances takes the inward pressure of the cutter by contacting with suitable body portions, and also prevents the cutter being twisted or rotated in any manner which might cause the cutter to be twisted out of the body. This greatly relieves the shanks of the cutters in both cases from these strains.

Q. 39. (By Mr. BLAKESLEE.) You say that the notch on the body of the cutter of the improved Double reamer exhibit has no counter-part in the cutter construction of "Defendant's Exhibit Wilson Patent." What is the result or effect obtained by providing this notch?

A. I take it you mean the transverse notch on the inside of the cutter-shank.

Q. 40. No. I mean the notch that runs length-wise of the cutter on the body of the cutter.

A. The same open space between the prongs on the cutter [234] body of the Wilson underreamer permits a contacting of the cutter with the body only as two separated portions on the Wilson cutter. The same action is accomplished in the Double underreamer by providing a notch in the center of the cutter body on the inside which notch divides the spreading-surface into two separate parts.

Q. 41. And how much of this surface at each side of the notch cooperates with a spreading-surface in the improved Double reamer exhibit?

A. The entire width, from each side of the notch

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to the outer edges of the cutter body.

Q. 42. What comparison can you make as between the cutters of "Complainant's Exhibit Wilson Patent" and the cutters of "Complainant's Exhibit Improved Double Reamer and Cutters" with respect to the effect produced by the enlargement of the bodies of the cutters and at the cutting or operative ends thereof?

A. This increased width permits in both cases the cutters to occupy a greater arc of the circle produced by the outer edges of the cutters when in expanded position, and which is the circle to which the hole must be reamed. It is an established fact that the larger the portion of this circle is covered by the cutters the more of the hole is reamed at each stroke and the fewer strokes at a certain level are necessary to cover the entire circumference of the hole, and thus completely ream the same. Also oftentimes there are hard spots in the walls of the hole which a narrow cutter will slip past either on one side or the other, requiring a continued reaming at that point in the hope that the cutter will strike just in that particular relation to the circumference of the hole so as to cut off the projecting hard spot. If the cutter is wider and occupies a larger portion of the circumference, this can be accomplished in much less time. Also with narrow cutter reamers this action often tends to start [235] the reamer reaming down on opposite sides of the hole in position of the two cutters, this preventing the underreamer from turning, and causing what is known as "key-seat-

(Deposition of W. W. Wilson.)

ing” the hole or the production of two reamed slots down on opposite sides of the hole, while the rest of the hole is not reamed. Thus the driller may believe the hole to be reamed down to a certain depth, but when there is an attempt to lower the pipe to this point it is found impossible, because the pipe hangs up on the unreamed portions of the hole. This causes much difficulty and delay, as it is very difficult to ream a hole after it has once become key-seated, particularly with a reamer having narrow cutters. This difficulty has been almost entirely overcome by the widening of the cutters at their cutting edge so as to embrace as much possible of the circumference of the hole. Also, the increased width of the cutter caused the definite points where the blow is taken on the cutters to be distributed over a greater distance, and thus the wear of the cutter in reaming is reduced, making the cutter ream more of a hole without withdrawing and redressing the cutters.

Q. 43. Do the observations which you have made this morning with respect to the cutters of the improved Double underreamer exhibit here apply equally and with respect to the various features of the cutters to the cutters of the improved Double reamer, as found in the market, with which you have testified you are familiar, and, if not, point out any distinctions which you wish to make?

Mr. LYON.—Objected to as leading.

A. The only difference which I note is that the cutters of the underreamer shown in “Complainant’s Exhibit Improved Double Reamer-cutters” seem to

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contact with the body on the upper lateral extended faces of the cutter body in certain positions when the cutters are expanded. In the Double improved underreamers which I have noticed in the field these points do [236] not contact except possibly after a large amount of wear has occurred. Otherwise they are the same.

Q. 44. (By Mr. BLAKESLEE.) How, if in any manner, would you account for this difference?

A. This is due to the fact that the cutters in the reamer body are extensively worn.

Q. 45. At what particular points would such wear result in such variations?

A. The dovetail shoulders on the reamer body and the corresponding shoulders of the cutters have become worn, permitting a large amount of lateral play of the cutters, and also the up-thrust-bearing on the reamer body which contacts with the extreme upper end of the cutter-shank has become appreciably worn.

Mr. BLAKESLEE.—As far as now advised, this completes the direct examination of this witness, and counsel may cross-examine. We reserve the right to recall the witness, if necessary or desirable.

Mr. LYON.—Without waiving the objection to the taking of the deposition of this witness, and without waiving the motion to strike such deposition from the record on the ground stated in the objection and notice heretofore given, but subject thereto and to the ruling thereon, and the cross-examination of the

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witness to abide and follow such ruling, I will cross-examine the witness.

Mr. BLAKESLEE.—We wish to have it appear of record that we are with all possible diligence making out our *prima facie* case, this action having been set for final hearing May 20 of this year. We do not understand that the pendency of any motion such as counsel has brought with respect to the testimony of the previous witness, E. C. Wilson, should be allowed to interfere by its mere pendency with our showing of diligence in this respect, without order from the Court, which has not been obtained, so far as we know. [237]

Cross-examination.

(By Mr. LYON.)

Q. 46. Please take one of the cutters of "Complainant's Exhibit Wilson Underreamer" and compare the same in detail with the showing of the drawings of "Complainant's Exhibit Wilson Patent," having particular reference to the showings of such cutters as set forth in figures 1, 3 and 8 thereof, and state any differences which you may find.

A. The shoe-notch 30 shown in Figure 8 is placed higher up on the cutters shown in the "Exhibit Wilson Underreamer" and is less pronounced. The slight bevel shown in the reamer-cutter in Figure 8 at the upper left hand corner of the shank does not now exist on the cutter shown in the "Complainant's Exhibit Wilson Underreamer." The two slight round depressions at the sides of the dovetailed ways at their lower end are not shown in the patent draw-

(Deposition of W. W. Wilson.)

ing, and are for the purpose of machining. The small depressions in the upper case of the shoulders produced by the lateral extension of the body of the cutter is not shown in the patent drawing and is for the purpose of certain processes in setting the reamer prior to its use in the hole. The beveled face at the lower inside of the cutter-shank is carried down lower on the body face 4³ in the cutter of "Complainant's Exhibit Wilson Underreamer" than in the patent.

Q. 47. In your last answer you have referred to "body-face 4³" as the extension of the cutter from side to side and not simply the expansion bearing-faces of the cutters; is that correct?

A. The face 4³ is the expansion bearing-face of the cutter.

Q. 48. And the part which is the cutter of "Complainant's Exhibit Wilson Underreamer," which you state has been carried down further, is a part which extends between these two bearing-faces [238] 4³; is that correct? A. Yes, sir.

Q. 49. And there is a similar part, although not extending down as far, shown in figure 8 and also in figure 3 of the drawings of the Wilson patent No. 827,595, "Complainant's Exhibit Wilson Patent"? Is that correct? A. Yes, sir.

Q. 50. In the device of "Complainant's Exhibit Wilson Patent," what do you understand to be the principle of action in the expansion of the reamer?

Mr. BLAKESLEE.—Objected to as not cross-examination. And the attention of the Court is

(Deposition of W. W. Wilson.)

called to the objection registered by the defendant's counsel upon direct examination of this witness with respect to inquiries other than those directed at the cutter construction. Our position in this case is that the election made on the charge of infringement as shown in the record makes such charge concern the cutters and the co-operating parts of the bodies, with the assumption of suitable means for causing expansion and contraction, but does not concern the principles of expansion and contraction, and, apparently, that contention is borne out by the objections of counsel.

Mr. LYON.—I do not desire to argue objections on the record and will simply state that defendant's position is that claims 16 and 17 are for underream-cutters as an article of manufacture, and have nothing whatever to do with such cutters so far as their relations to other portions of the reamer are concerned, and said claims must stand or fall upon the cutters as cutters *per se* and alone. But that in view of the nebulous character of complainant's contention that such claims include or involve something other or different from the cutters *per se*, we insist it is both proper and necessary to develop the differences [239] which exist between the structures disclosed by the patent in suit and the alleged infringing device.

Mr. BLAKESLEE.—We do not think there is anything nebulous save and except that the word "nebulous" involves plurality, and we have plurally stated our position on the record as to our contention and

(Deposition of W. W. Wilson.)

election. The further objection is made that the question is indefinite and involves sweeping conclusions and not definite statements of findings.

A. The action of expansion of the underreamer shown in the patent is that of pivotal suspended cutters being expanded by introducing wedge-shaped pieces between them near their lower ends.

Q. 51. (By Mr. LYON.) The wedges that you refer to comprise the beveled faces 17 of the so-called forks or prongs and the spreading-bearings 9 on the sides of such prongs? Is that correct?

A. Yes, sir.

Q. 52. What part of the underreamer-cutter in this exhibit contacts with the spreading-bearings 9?

A. That portion of the expansion bearing-faces 4³ which lies outside of the extreme width of the shank, as shown in Figure 9.

Q. 53. Is there any other portion of these bearing-faces 4³ than that to which you have referred in your last answer?

Mr. BLAKESLEE.—The question is objected to as indefinite. Does counsel mean, are there any such portions or do any such portions enter into any such action?

Mr. LYON.—Will you please read the question?
(The notary reads the question.)

Mr. LYON.—That question is all right, just as it stands.

A. In the cutter Figure 9 there is shown extensions of these faces connecting each other, which

(Deposition of W. W. Wilson.)

portion is in use in any action of the underreamer-cutter. [240]

Q. 54. (By Mr. LYON.) Does that portion to which you have last referred in your reference to figure 9 of "Complainant's Exhibit Wilson Patent" bear upon anything either in expansion or contraction or normal operation of the bits or cutters in underreaming? A. No, sir.

Q. 55. In your understanding of the English language would you call that portion of such showing, then, a bearing-face? A. No, sir.

Q. 56. Do you understand that the showing of figure 9 of Complainant's Exhibit Wilson Patent" is different from the showing of figures 3 and 8 with reference to the expansion-bearing-faces or bearing-faces 4³ of the cutter? A. No, sir.

Q. 57. I show you "Complainant's Exhibit Wilson File Wrapper and Contents," and call your particular attention to a photo print of the drawing therein endorsed on its back "Mail Room Jun. 18, 1906, U. S. Patent Office, Exhibit 'A,' E. C. Wilson Underreamer," and ask you to examine the same and state if you understand such drawing.

Mr. BLAKESLEE.—Objected to as not cross-examination.

A. I do.

Q. 58. (By Mr. LYON.) In this drawing to which I have last called your attention you find a view, a side elevation, of the cutter?

Mr. BLAKESLEE.—The same objection to any questions on this exhibit.

(Deposition of W. W. Wilson.)

A. Yes, sir.

Q. 59. (By Mr. LYON.) Does this view correspond with the view of figure 8 of "Complainant's Exhibit Wilson Patent" in so far as the showing of the bearing-face or expansion-bearing-face 4³ of the cutter and the metal projecting between the two bearing-faces 4³ are concerned? [241]

A. Yes, sir.

Q. 60. Comparing now this view of this photo print to which I have directed your attention with one of the cutters of "Complainant's Exhibit Wilson Underreamer" in the particular to which your attention has been last directed, to the expansion-bearing-faces 4³ and the metal extending there between, please state any differences that exist there between.

A. There is a slight difference in the amount of metal. However, it is simply one of degree as to the extension of the metal between the bearing parts.

Q. 61. Taking now one of the cutters introduced in evidence as "Complainant's Exhibit Old Style Double Reamer-Cutter No. 1," the thrust-bearing on the inner face of this cutter extends entirely across the width of the cutter, does it?

A. It extends entirely across the width of the cutter-shank.

Q. 62. Is it not wider than the cutter-shank?

A. No, because in this cutter there exists an auxiliary dovetail which forms a part of the shank.

Q. 63. Such thrust-bearing-face extends in an unbroken plane the full width of the shank and the

(Deposition of W. W. Wilson.)

auxiliary dovetail, does it?

A. It extends the full width of the shank.

Q. 64. Is it not wider than the shank?

Mr. BLAKESLEE.—I object to this as having been just answered a question or two before.

A. I have stated that the auxiliary dovetails in this instance are a part of the shank.

Q. 65. (By Mr. LYON.) Then I misunderstood your criticism which apparently is that this thrust-bearing is upon the shank of the cutter and not upon the body of the cutter, as the shank and body are differentiated by you in your testimony. Is that it? [242]

A. This thrust-bearing is upon the shank of the cutter in the old-style Double underreamer-cutter No. 1.

Q. 66. And the shank has two shoulders extending out at right angles from the side at the upper end of the shank, and the inner faces of such shoulders form a continuation of the thrust-bearing face of the cutter? Is that correct?

A. Yes. The inner-bearing-face extends the full width of the cutter-shank, or that part of the cutter above the lower or enlarged portion of the cutter.

Q. 67. And the cutter is enlarged laterally by the right-angled shoulders just below the V-notch utilized in expanding the cutter? Is that correct?

A. In this instance, slightly; yes. This is probably due to its use in the upsetting operations in dressing the cutter.

(By consent of counsel an adjournment is now

(Deposition of W. W. Wilson.)

taken until Saturday, April 18, 1914, at the office of Raymond Ives Blakeslee, Esq., solicitor for complainant, at the hour of 10 o'clock A. M., with the understanding that if either counsel is engaged in other litigation at that time a further adjournment shall be taken.)

Office of Raymond Ives Blakeslee, Esq., Solicitor
for Complainant.

April 18, 1914, 10 o'clock A. M.

This being the time and place to which the further taking of proofs on behalf of complainant was continued, by consent of counsel a further continuance is now taken until Wednesday, April 22, 1914, at this same place, at the hour of 10 o'clock A. M. [243]

Office of Raymond Ives Blakeslee, Esq., Solicitor for
Complainant.

Wednesday, April 22, 1914, 10 A. M.

This being the time and place to which the further taking of proofs on behalf of complainant was continued, proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

W. W. WILSON, recalled.

Cross-examination (Resumed).

(By Mr. LYON.)

Q. 68. Referring to complainant's exhibit "Old Style Double Under Reamer Cutter No. 1," what is it that you say that the enlarging laterally by the

(Deposition of W. W. Wilson.)

right angle shoulders just below the V-notch utilized in expanding the cutter, of the inner bearing-face, is probably due to its use in the upsetting operations in dressing the cutter as referred to in your answer to question No. 67?

A. Because I have seen a large number of these cutters in the field where no such enlargement exists, the cutter body being a continuation due to the greater width than the thrust-bearing surface.

Q. 69. Then in this answer you were referring to the lateral enlargement of the cutter complainant's exhibit "Old Style Double Reamer Cutter No. 1," below the thrust-bearings, which enlargement in this case is approximately a quarter of an inch on each side.

A. In my answer to question 67 I referred to the slight enlargement of the cutter body laterally just below the inner bearing-face of the cutter. The auxiliary dovetails form a slight [244] enlargement of the shank of the cutter just below the V-notch referred to, the same as the main dovetails are a slight enlargement of the shank at the top of the cutter.

Q. 70. But such enlargement laterally of the thrust-bearing face of the cutter is not formed in the upsetting operations in dressing the cutter, is it?

A. No; it is formed in the machining operations.

Q. 71. And does this lower offset or right-angular shoulder of what you have termed the body, and to which you have referred this morning, which has apparently, in your opinion, been formed in the upsetting operations in dressing the cutter?

(Deposition of W. W. Wilson.)

A. Yes, sir.

Q. 72. And to this extent your answer to question 67 was not clear? A. Yes, sir.

Q. 73. What is the purpose in the underreamer of complainant's exhibit "Wilson Patent" in having the expansion-bearing-faces 4³ terminated in rounded corners or bearings, identified by the numerals 16 in the drawings?

Mr. BLAKESLEE.—We object to this question as not the best evidence. The patent should speak as to this, as the question is limited to the patent disclosure.

A. The upper points of the bearing surfaces 4³ or contact with the bearing-faces 17 when the cutters are in collapsed position as shown in figure 1, and as the cutter travels from expanded to collapsed position, or vice versa, these upper edges of the faces 4³ ride over bearing-faces 17 and 9 until the cutters are in nearly completely expanded position, when the cutter-face 4³ contacts with the bearing-face 9.

Q. 74. Is it your understanding of the device of Complainant's exhibit "Wilson's Patent," the surface identified by the numeral 9 by reason of such respective surfaces diverging [245] from one another as they approach the upper end of what might be termed the forks or prongs, cause a portion of the expansion of the bits or cutters? A. Yes, sir.

Q. 75. And it is the bearing-face or expansion-bearing-face 4³ of the cutter which contacts with this surface 9 to so expand the bit or cutter?

(Deposition of W. W. Wilson.)

A. Yes, sir.

Q. 76. What is the principle of that operation?
Is it a wedge action?

Mr. BLAKESLEE.—Objected to as not cross-examination, and under the limitations imposed upon the scope of this charge of infringement it is not concerned in the issue involved; and further that it is calling for a conclusion.

A. Yes, sir.

Q. 77. (By Mr. LYON.) Is there any rocking or tilting action of the surfaces 4³ of the cutter of complainant's exhibit "Wilson Patent" on this surface 9 in the expansion of such cutters?

A. The cutters expand over the surface with a pivotal action. The center of which pivotal action being near the top of the cutter-shank, there must be some slight rolling of this surface 4³ up over the surface 9. They are not in complete contact throughout the entire travel of the cutter while these faces are in contact. The complete contact is broken as the cutter comes down, the cutter then being at the upper edge of the face 4³ against the bearing-face 9.

Q. 78. Referring now to complainant's exhibit "Improved Double Reamer and Cutters," and to either one of the cutters of such exhibit, do the shoulders formed by the right-angle extension of the body of the cutter beyond the width of the shank contact with any portion of the body-portion or mandrel of the Double reamer to cause the tilting action of the cutter? [246]

(Deposition of W. W. Wilson.)

A. This portion of the cutter, as the cutter nears expansion from the collapsed position, slides with a rocking motion on the lower bearing-face of the hollow-slotted extension of the reamer body, causing a pivotal action at or near this point while the upper ends of the cutters are drawn closer together by reason of the upwardly and inwardly inclined dovetailed ways on the reamer body.

Q. 79. Now, Mr. Wilson, please identify exactly what you mean in your last answer by "this portion." Is it the top shoulder of the laterally extended parts, to which I have referred? Or is it the inner surface or face?

A. The inner surface or face as it contacts with the corner at the lower end of the parallel bearing-faces of the Double underreamer body.

Q. 80. And with what is that portion of this same surface which lies just above the particular portions to which you have referred and in line with the width of the shank portion, in contact?

A. It is a traveling contact with this corner at the lower end of the parallel bearing-face of the underreamer body, forming a line contact horizontally when the reamer-body axis is vertical, which line contact travels down over the entire inner bearing-face of the Double underreamer cutter.

Q. 81. I will ask that question No. 78 be read to the witness and that he may answer the same.

Mr. BLAKESLEE.—Objected to as indefinite in view of the previous use of the word "shoulder" in the testimony in this case, and we would ask that the

(Deposition of W. W. Wilson.)

question be made a little more specific as to the parts designated as "shoulders."

Mr. LYON.—The witness has identified the inner surfaces or faces formed by the lateral projections of the cutter of the so-called "Improved Double Reamer," and the question is now [247] directed to the shoulders formed by such projections, such shoulders being very apparently at the top of such lateral enlargements.

A. No. This shoulder, as I understand it now, meaning by "shoulder" the part above or at the top of the lateral extension of the cutter body, has no definite action in expanding the cutters.

Q. 82. (By Mr. LYON.) What purpose has this shoulder in the Double so-called improved underreamer, as you understand same?

A. The shoulder is made necessary by the lateral extensions of the expansion-bearing-face on the cutter body, and is produced by a widening of the cutter body laterally outside of the width of the cutter-shank.

Q. 83. Then in your opinion these shoulders to which we have just referred as "shoulders" perform no function whatever in the so-called Double improved underreamer, either in expansion of the bits or otherwise?

A. They permit the widening of the cutter-bearing-surfaces so that as the cutter nears the expanded position it is much better protected against rocking motion, and permits of a greater width of the cutter body being used.

(Deposition of W. W. Wilson.)

Q. 84. Now, please answer the question as to whether in such so-called improved Double reamer the shoulders themselves are used for any purpose, so far as you understand such Double improved reamer.

Mr. BLAKESLEE.—If the question be not indefinite, we assume that counsel is still referring to top terminal portion of the lateral extensions when he uses the term “shoulders.”

Mr. LYON.—I am referring to the part identified by the witness as shoulders as distinguished from the portion of the thrust-bearing face. [248]

A. No; this part plays no definite action in the expanding of the cutter, outside of at a certain instant in the expansion of the cutter. This shoulder is in contact with the lower corner of the parallel bearing-surfaces.

Q. 85. (By Mr. LYON.) Please explain what instant you refer to.

A. When this shoulder comes in contact with the parallel bearing-surfaces, when the cutter slides into expanded position.

Q. 86. Is that not the extreme upper point of the inner face to which you have last referred, rather than the top or shoulder?

A. This shoulder which you have referred to, as I understand it, is the point of intersection of the plane of the inner bearing-face of the upwardly and inwardly inclined face at the top of the cutter body.

Q. 87. No. The shoulder I refer to is that shoulder which you see, if you will take one of the said

(Deposition of W. W. Wilson.)

cutters and look down directly upon it from the upper end of the shank, and the shoulder which extends at right angles to the shank of the cutter, and with this statement, please answer the question: Does that contact with any portion of the body of the Double underreamer in expanding the cutters in any manner?

Mr. BLAKESLEE.—Objected to as indefinite, because when you look down upon the cutter in the manner specified, you see extended faces of the lateral extensions and also the terminal portions of those faces.

A. What I have been referring to and understood as being the shoulder referred to, was simply the line of intersection of those two planes given above. The top of the shoulder or upper side of the lateral extension of the cutter body does not contact to form any part of the expansion of the cutter.

Q. 88. (By Mr. LYON.) The top of the shoulder or tops of [249] the shoulders formed by laterally extending the cutter in the cutter or bit of complainant's Exhibit "Wilson Patent," does contact with the wedge surface or surfaces 9? Is that correct?

A. Yes, sir.

Q. 89. And for what purpose?

A. They ride up in contact with the surfaces 17 and 9 to cause the expansion of the cutter.

Mr. LYON.—Let the record show that the last two questions and answers are at this point reread to the witness, and he can make any explanation he wants

(Deposition of W. W. Wilson.)

to. (The last two questions and answers are read by the notary.)

A. In my last answers I have again referred to the upper edge of the bearing-face shown at 4³ in the patent drawing. The top faces of the lateral extensions of the cutter body perform no part in the expansion and contraction of the Wilson cutter.

Q. 90. What function does the surface in the cutter of the complainant's exhibit "Wilson Patent" which extends at right angles to the shank and lies above the upper end of the bearing-surface 4³, perform in the expansion of the cutters in the Wilson underreamer?

Mr. BLAKESLEE.—Objected to on the ground that it is indefinite.

A. They ride up on the surfaces 17 and 9 while the cutter is traveling from collapsed to expanded position. The purpose of this riding is to cause expansion of the cutters. I refer in this answer to the rounded portion at the top of the inner thrust-bearing-faces 4³ on the cutter shown in complainant's exhibit "Wilson Under Reamer."

Q. 91. (By Mr. LYON.) Is there any correspondence in the action and purpose of the contact of the portion you have just referred to with such surfaces 17 and 9 in the Wilson underreamer, [250] between the complainant's exhibit "Improved Double Reamer and Cutters" in expansion of the cutters, by any similar contact of the shoulder formed by the lateral extension of the body portion, beyond the width of the shank, in the improved Dou-

(Deposition of W. W. Wilson.)

ble cutter and reamer, and, when I use the term "shoulder" in this connection, I refer to the same shoulder to which you have referred in your last answer as being "the rounded portion at the top of the inner thrust-bearing-faces 4³ on the cutter shown in complainant's exhibit "Wilson Under Reamer."

A. There is no correspondence in the action as far as the expansion and contraction of the cutters are concerned.

Q. 92. The wedge action in the so-called improved Double reamer is accomplished entirely by the lower wall of the V-shaped groove in the shank of the cutter at the top of the thrust-bearing, and a portion of which thrust-bearing extends up onto the shank of the cutter in complainant's exhibit "Improved Double reamer is accomplished entirely by rect?

A. The wedge action or first part of the expansion of the Double underreamer cutter is as stated in the question.

(By consent of counsel an adjournment is now taken until this afternoon at 2 o'clock, at this same place.)

Office of Raymond Ives Blakeslee, Esq., Solicitor
for Complainant.

Wednesday, April 22, 1914, 2 o'clock P. M.

This being the time and place to which the further

(Deposition of W. W. Wilson.)

taking of proofs on behalf of complainant was continued, proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant. [251]

W. W. WILSON, recalled.

Cross-examination (Resumed).

(By Mr. LYON.)

Q. 93. In your last answer you say, "the first part of the expansion," is thus caused. What other part or action is there in expansion in the Double reamer?

A. The second part of the expansion of the Double underreamer-cutter is caused by the inner bearing-faces of the cutters riding upon the parallel bearing-faces of the hollow-slotted-extension, forming thereon a fulcrum for the rocking or tilting of the cutters when the upper ends of the cutters are drawn closer together by reason of the cutter dovetails sliding upward in the upwardly inclined dovetailed ways of the body, thus drawing the upper ends of the cutters closer together and causing the cutting edges of the cutters to be expanded by reason of the fact that they are below the fulcrum point of this tilting.

Q. 94. What size reamer and bits comprise complainant's exhibit "Wilson Underreamer"?

Mr. BLAKESLEE.—Objected to as indefinite.

A. This is a 4½ inch, 15-pound underreamer. That is, it is for a certain type known as 4½ inch 15-pound type.

(Deposition of W. W. Wilson.)

Q. 95. (By Mr. LYON.) Do you know of what size underreamer complainant's exhibit "Old Style Double Reamer Cutter No. 1" was made.

A. No, sir.

Q. 96. What is your best judgment?

A. It is for a small sized reamer. It may be a 4½ inch.

Q. 97. Please explain to us how, according to your understanding, the cutter or bit is prevented from twisting or rotating, as you call it, in the old style Double underreamer?

A. The rotating strain applied on the cutter is transmitted [252] from the body of the cutter to the shank of the cutter where it is resisted by the inner expanding thrust-bearing-face on the one side, and the dovetailed ways on the opposite side.

Q. 98. And how is this prevented in the device of Complainant's Exhibit "Wilson Patent"?

A. By the contact of the cutter-face 4³ with the face 9 on one prong of the underreamer body and the opposite dovetailed ways of the cutters and body may have a small restraining action. However, the fact that the bearing-face 9 is placed almost directly underneath a point where the stress is applied, leaves little or no reaction for the dovetailed ways on the opposite side of the cutter.

Q. 99. Please explain a little more fully what you mean in your last answer by the bearing-face 9 being placed almost directly underneath the point where the stress is applied.

A. The fact that in the Wilson underreamer as

(Deposition of W. W. Wilson.)

shown in the patent the underreamer body is extended down between the lower portion of the underreamer-cutter to a point nearly in line with the cutting edges of the cutters, places this bearing in a position to almost entirely overcome the rotative strains placed on the cutters. Were this bearing higher up on the cutter and closer to the center line of the cutter, greater strains would be thrown on this bearing and on the dovetailed ways on the opposite side of the cutter.

Q. 100. Then the distinction that you have just drawn is due to the location of the bearings 4³ close to the cutting edges of the cutter in the device of complainant's exhibit "Wilson Patent" and when I say close, I mean comparatively low down on the cutter.

A. Partly so, yes. Also due to the fact that these bearings are placed at the outer edges of the cutter body. That is, at points as widely separated as possible. [253]

Q. 101. In the device of complainant's exhibit "Wilson Patent" the bearing-faces 4³ are on the inner side of the bit, the shoulders of which project at right angles to the shank of the cutters, are they?

A. Yes, sir.

Q. 102. And these bearing-faces 4³ contact with the inclined surfaces 9 on the body of the reamer, to cause the final wedge action or expansion of the cutters?

A. On that portion of the body of the underreamer called in the patent "prongs."

Q. 103. And referred to by the figure 9?

(Deposition of W. W. Wilson.)

A. Figure 9.

Q. 104. The initial portion of the wedge action in the device of this Wilson patent is caused by the top of the shoulder coming in contact with and riding on the beveled end or surface 17 of the prong of the reamer? Is that correct?

A. This part of the expansion is caused by that portion of the shoulder at the top of the bearing-face 14 riding against the inclined surface 17.

Q. 105. Is it a portion of the surface 4³ which makes this contact, or is it in reality a part of the top of the shoulder on which these bearing-surfaces 4³ are formed at one side, that causes this initial expansion and wedge action in the device of complainant's exhibit "Wilson Patent"?

A. The line of intersection of these two faces which contact with the surface 17.

Q. 106. Please take complainant's exhibit "Old Style Double Reamer Cutter No. 1," and tell us how much wider, in your opinion, the inner thrust-bearing-surface, below the V-shaped slot in the shank, which causes the wedge action expansion of the bit, would be required to remove the stress of the tendency of such bit or cutter to rotate in such Double underreamer, from the dovetailed ways. [254]

Mr. BLAKESLEE.—Objected to as indefinite and, particularly, as to the wording "stress of the tendency," and, further, as to the removal of such stress, it assumes something contrary to the testimony of the witness. Also objected to as calling for an arbitrary conclusion and an engineering opinion

(Deposition of W. W. Wilson.)

which possibly would require engineering calculation to give a definite and accurate answer.

A. The wider this bearing-surface is the better it would tend to resist and overcome the tendency toward rotary action. However, placed as it is on the shank of the cutters, there would tend to be necessarily great stresses thrown upon this bearing. This bearing, placed as it is, on the cutter-shank, it is almost impossible to overcome the rotating action by simply widening the bearing-surface.

Q. 107. (By Mr. LYON.) Then in your opinion the closer this bearing is brought down to the cutting edge of the bits or cutters the more nearly you will relieve the dovetails of such rotating action or tendency to rotate?

A. Yes; by bringing this bearing-surface down more nearly in line with the cutting edges of the cutters and widening it to the full width of the cutting edges, the tendency toward rotating action is almost, if not completely, overcome.

Q. 108. If the said bearing-surface of complainant's exhibit "Old Style Double Reamer Cutter No. 1" were brought down close to the cutting edge of such cutter, is it possible for you to state how much more such tendency to rotate would be prevented by the widening if such bearing an eighth of an inch on each side?

Mr. BLAKESLEE.—Objected to as calling for an arbitrary conclusion and as necessarily a determination of an engineering problem, and not in that respect cross-examination and not calling for a fact but

(Deposition of W. W. Wilson.)

calling for testimony involving calculation of *of* factors to determine the fact. [255]

A. If this bearing-surface were brought down closer to the cutting edge of this cutter, it would greatly tend to overcome the rotary action. However, this cutter is proportionately very narrow on the cutter face as compared with the underreamer produced today, as the tendency in underreamer improvement has been to widen the cutter faces.

Mr. LYON.—We move to strike out the answer from the record and exclude it from consideration as not responsive to the question, and ask that the question be reread to the witness.

(Question is read to the witness.)

A. No; it is not possible to state how much that would be.

Q. 109. (By Mr. LYON.) I call your attention to letters patent of the United States No. 762,435, dated June 14, 1904, to C. A. O'Donnell and A. G. Willard, with which I understand you are familiar, having testified with regard thereto in the previous litigation to which you have referred in your direct examination. Please examine the device of this patent and state whether you find in the device of this patent the same tendency of the cutters to which you have last referred.

Mr. BLAKESLEE.—Objected to as not cross-examination, and the further objection is made that this is not the proper time and place to present the defense to this action, or purported defense, and the same objection will be noted without repetition as

(Deposition of W. W. Wilson.)

registered against any and all questions put with respect to the subject of this question.

A. Due to the rounding condition of the cutter edges as shown in figure 5 at 22. It would be difficult to say whether or not this rotary action would be present to any large extent.

Q. 110. (By Mr. LYON.) What is the manner in which you understand such rotary action to be resisted in the device of this O'Donnell and Willard patent? [256]

A. It is resisted by the cutters contacting with the partition 3 which is interposed between the cutters in expanded position.

Q. 111. The faces of this partition 3 form the in-thrust-bearings for the cutters, do they?

A. Yes, sir.

Q. 112. And the partition 3 extends from one side or edge of the periphery of the body of the reamer to the other? A. Yes, sir.

A. 113. And the thrust-bearing surfaces of the bits contacting with the surfaces of partition 3, just referred to, contacting therewith to the full width of the bits? A. I believe they do.

Q. 114. And are brought down in close proximity to the cutting edges, are they?

Q. 115. And such bearing-faces of the cutters or bits are extended out at right angles to and are a side face of a shoulder which is wider than the shanks of the bits? Is that correct?

A. I believe so, yes; although it is difficult to tell exactly from the drawings as to where contact existed.

(Deposition of W. W. Wilson.)

Q. 115. The bits of this O'Donnell and Willard patent have shanks, have they? A. Yes, sir.

Q. 116. And the lower ends of the bits are extended out or projected out at right angles to the shank of the bit or cutter, forming the shoulder?

A. Yes, sir.

Q. 117. And there is a single or one-piece bearing-face on the inner side of the bits and extending across the width of the bits at their widened-out portion, and covering all or [257] approximately all of the inner face of such shoulder, is that correct?

A. I believe so.

Q. 118. That is your understanding of said patent, is it? A. Yes, sir.

Mr. LYON.—Cross-examination is closed.

Mr. BLAKESLEE.—Now, reserving our objections to any testimony in this *prima facie* case with relation to this O'Donnell and Willard purported patent, the ruling upon such objections to be abided by, and subject to such ruling I will proceed to interrogate the witness further on this subject.

Redirect Examination.

(By Mr. BLAKESLEE.)

Q. 119. In the cutters of this purported O'Donnell and Willard patent No. 762,435, how many shoulders do you find on the cutters at the lower ends of the cutters?

A. There is one large semi-circular shoulder extending around the outside of the cutter.

Q. 120. What is the purpose of that shoulder as

(Deposition of W. W. Wilson.)

you make it out from the disclosure of this patent?

A. To take the up-thrust of the cutter by being in contact with the underreamer body.

Q. 121. Please compare the general shape or outline of the shank of each of these cutters with the shank of the cutters of Complainant's Exhibit "Wilson Patent," taking a view of the inner face of the same.

A. The inner face of the Wilson cutter shank is a rectangular piece, while the inner face of the cutters shown in the patent No. 762,435 has parallel top and bottom edges and upwardly and inwardly inclined lateral edges.

Q. 122. Now, projecting the lateral edges of one of these cutters downwardly toward the cutting edge of the cutter, [258] please state where the termini of such projected sides will fall with relation to the cutting edge.

A. It will fall very nearly on the same.

Q. 123. Do you, therefore, find upon the body or lower end of one of these cutters any enlargement which produces a wider cutting edge than would be provided by a projection of the side lines of the shank of the cutter as last inquired about?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 124. (By Mr. BLAKESLEE.) If the side lines of the shanks of the cutters of Complainant's Exhibit "Wilson Patent" are projected downwardly to the cutting edge of the cutter, where will such side

(Deposition of W. W. Wilson.)

lines fall with respect to the lateral extremities of the cutting edge?

A. Some distance within the lateral edges of the cutting edge.

Q. 125. And outside of such extended side lines of the shanks what will be found to exist or be present in the cutters of the Wilson patent?

A. The shoulders or lateral extensions shown at point 16, together with the inner bearing-faces on each side shown at 4³, together with the cutting edge of the cutter below these points.

Q. 126. And will any cutting edge be found to remain outside of the side lines of the shanks of a cutter of the O'Donnell and Willard patent if such side lines are extended downwardly to a zone of the cutting edge?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 127. (By Mr. BLAKESLEE.) Now, if a cutter of complainant's "Improved Double Reamer and Cutters," what is the general shape of the shank of the cutter, viewed from its inner face? [259]

A. Rectangular.

Q. 128. And if the side lines of the shank be extended downwardly to the zone of the cutting edge, what, if anything, is found to be present in the cutter outside of these side lines?

A. Lateral extensions of the cutter-expanding bearing-face, a considerable portion of the cutter body and a considerable portion of the cutting edge of the cutters.

(Deposition of W. W. Wilson.)

Q. 129. What have you to say as to the width of such portions of the cutter lying outside of such extended side shank line, tracing such portion from its top to its bottom.

A. Fully $\frac{2}{5}$ of the entire cutting edge of the cutter lies without these lines.

Q. 130. How as to the maintenance of the width in such outside cutter portion?

A. These outside cutter portions extend the width of the cutter.

Q. 131. And how as to the maintenance of width across these portions of the cutter, comparing any one transverse area with another?

A. It would give about $\frac{2}{5}$ increased area for an increase of width of $\frac{2}{3}$ of the original cutting width.

Q. 132. Comparing these lateral outside cutter portions at the top of the body of the cutter with these lateral outside portions at the bottom of the body of the cutter, what have you to say with respect to the relative width?

A. The relative width is increased the same at the bottom as at the top of the cutter body.

Q. 133. Now, how with respect to the cutter of the O'Donnell and Willard patent in this connection? That is, what do you find in this connection in the O'Donnell and Willard cutter?

A. The increased cutter width at the top of the cutter body has produced no increased width in the cutting edge thereof. [260]

Q. 134. Then please compare the results obtained or effects produced by the provision of the single up-

(Deposition of W. W. Wilson.)

thrust shoulder running around the outer surface of the cutter of the O'Donnell and Willard patent at the top of the body thereof, with the two shoulders upon a cutter of Complainant's Exhibit "Wilson Patent" and the two shoulders upon a cutter of Complainant's Exhibit "Improved Double reamer and cutters," with respect to the dimensions or width of the cutting edge of the cutter.

A. The single shoulder on the cutter of the O'Donnell and Willard patent produces no increased width of cutting edge, while the two shoulders on the cutter of the Wilson patent produces an increased cutting edge equal to their combined width. The same also applies to the cutter of the Double improved under-reamer and cutters as shown in Complainant's Exhibit "Improved Double Reamer and Cutters."

Q. 135. What *so* you make out with respect to the width of the single shoulder or up-thrust bearing the cutter of the O'Donnell and Willard patent, considering it from one end throughout its curved extension to the other end?

A. Its width is very small as compared to its length.

Q. 136. Please compare the width of this single shoulder at its ends with its width at the portions of it between its ends.

A. The width is the same throughout its circumferences.

Q. 137. Compare this curved continuous shoulder of the O'Donnell and Willard patent cutter with the shoulders or lateral extensions of the cutter of Complainant's Exhibit "Wilson Patent" and the cutter

(Deposition of W. W. Wilson.)

of Complainant's Exhibit "Improved Double Reamer and Cutters," particularly with respect to the backs or outer faces of the three cutters.

A. The bearing face on the O'Donnell and Willard cutter causes a jog or shoulder on the back of the O'Donnell and Willard cutter. The shoulders on the Wilson underreamer-cutters and the [261] improved Double reamer and cutters do not form any such shoulder in the backs of the cutters.

Q. 138. What do you make out from the O'Donnell and Willard patent to be the office of this continuous curved rib or shoulder upon the top of the cutter body?

A. It is for the purpose of taking the up-thrust of the cutter.

Q. 139. Do you find any reference in the disclosure of this patent to any other office of such rib of enlargement or shoulder?

A. The outer edges of these shoulders 15 and 15' also engage with the shoe 22' to cause collapsion of the cutters when the reamer is withdrawn from the hole.

Q. 140. Do you find in the cutters of complainant's exhibit "Wilson Patent" and of complainant's exhibit "Improved Double Reamer and Cutters" any parts or features which correspond in their function of office with these shoulders 15 and 15' on the respective cutters of this O'Donnell and Willard patent, and, if so, please designate.

A. The shoulder 30 shown in the figures 7 and 8 and also figures 1 and 3 of the Wilson patent, show

(Deposition of W. W. Wilson.)

a shoulder which contacts with the shoe for the purpose of effecting collapsion of the cutters on withdrawal of the reamer from the hole. The same sort of notch is found on the shank of the cutter shown in complainant's exhibit "Improved Double Reamer and Cutters" on the shank at the outside thereof at about the middle portion of the slot in the shank.

Q. 141. Do you make out from any portion or all of the disclosures of the O'Donnell and Willard patent that those shoulders 15 and 15' of the respective cutters were provided for any other purpose than for imparting up-thrust to the bottom of the socket 2 and for co-operating with the shoe to effect contraction of the cutters? A. No, sir. [262]

Q. 142. Do the lateral bearing-faces 4³ at the tops 16 thereof, or at any portions thereof, referring to the cutter of complainant's exhibit "Wilson Patent," co-operate in any manner with the shoe or casing or with any part of the casing or any object or thing other than parts of the underreamer in causing collapsion of the cutters? A. No, sir.

Q. 143. Do the lateral bearing-faces on the bodies of the cutters of complainant's exhibit "Improved Double Reamer and Cutters" at the tops of such lateral faces or the extensions providing the same, or at any other portions thereof, co-operate in any way with the shoe on the casing or with any object or thing other than parts of the underreamer itself, in producing the collapsing action of the cutters?

Mr. LYON.—Objected to as leading.

A. No, sir.

(Deposition of W. W. Wilson.)

Q. 144. (By Mr. BLAKESLEE.) How do you understand the shanks of the cutters of the O'Donnell and Willard patent to be confined in the construction disclosed in that patent?

A. They are confined in the space formed at the lower end of the underreamer body in the socket between the inner wall thereof and the walls of the partition figure 3.

Q. 145. What sort of a fit is provided between the partition and the inner walls of the socket when the cutters are in expanded position?

A. A reasonably close working fit.

Q. 146. What, if any, effect will that have with respect to any tendency of the cutters to rotate upon a longitudinal axis?

Mr. LYON.—Objected to as leading and suggestive.

A. It is, of course, resisted by contact of the cutter-shank with the space in which it fits. [263]

Q. (By Mr. BLAKESLEE.) Please compare further the shanks of the cutters of this O'Donnell & Willard patent with the cutters of Complainant's Exhibit "Wilson Patent" and of Complainant's Exhibit "Improved Double Reamer and Cutters" with respect to the structural features of the same.

A. The cutter-shanks in the O'Donnell and Willard underreamer patent consist of a plane face on the inside, and on the outside of a curved face, which tapers upwardly and inwardly toward the inside plane face, surmounted at the top by a horizontal plane face and at the bottom joins to the main por-

(Deposition of W. W. Wilson.)

tion or body of the cutter 12. Near the top of the shank of the cutter is the slot called in the patent the "cross-head socket 14," in which spring-actuated means are operated. Above the outer edge of this socket 14 the cutter-shank is tapered off slightly to permit of collapsing action. In the Wilson under-reamer cutter shown in the Wilson Patent, the shank consists of a narrow piece of metal whose sides are parallel planes, whose inside is a single plane. At the line of contact of these planes there are dovetailed ridges 4-square. On the outside of the cutter-shank is an inclined face surmounted by a more steeply inclined face, 30 surmounted by a vertical face 4' and by a slightly angles face above that. On the inside of the cutter-shank near the top is a pocket 18 for the reception of spring-actuated means. The top of the cutter-shank is a horizontal plane surface with the inside edge beveled slightly.

The shank of the improved Double cutter consists of two parallel lateral faces joined at the back by a substantial vertical face. At the line of contact of these faces are dovetailed ribs or edges. The inner face of the cutter shank is broken by a notch consisting of two inclined planes. The top of the cutter shank terminates in a downwardly and outwardly inclined plane. The outside of the cutter-shank consists of a cylindrical or curved edge [264] near the top of which is a notch, and at this point there is a slot cut through the cutter-shank for the reception of the spring-actuated means, and through the lower part of this slot is a hole for the placing

(Deposition of W. W. Wilson.)

of a pin to lock the spring-actuated means in place.

Q. 147. Now, irrespective of the one or single curved rib or shoulder or enlargement upon the cutter of the O'Donnell and Willard patent reamer, and irrespective of the lateral extensions upon the cutter of the Complainant's Exhibit "Wilson Patent," and irrespective of the lateral extensions upon the cutter of Complainant's Exhibit "Improved Double Reamer and Cutters," please compare the action of the shanks of these three cutters with respect to the resistance to the stresses tending to rotate the cutters.

Mr. LYON.—Objected to as assuming a mode of operation and an element or series of elements to be used in co-operation with the cutter not appearing in or material to the issues of this case, which are confined solely to the underreamer cutter as an article of manufacture.

Mr. BLAKESLEE.—Our position in this matter as heretofore stated, is adhered to.

A. The shank of the O'Donnell and Willard cutter tends to resist the rotation by prying action caused by its irregular or crescent shape acting in a similar shaped pocket in the underreamer body.

The prying actions of the Wilson underreamer cutter shown in the Wilson patent tend to resist rotating action by stress being resisted by the dovetails 4-square and by a spreading action which would then be produced by the shank of the cutter on the prongs at the lower end of the underreamer body.

The rotating action will be resisted by the cutter-

(Deposition of W. W. Wilson.)

shank of the Double improved underreamer cutter by the dovetails [265] on one side, and the upper edge of the spreading-bearing on the cutter-shank acting against the hollow-slotted extension.

Q. 148. If the shoulder or rib or continuous bit or shoulder upon the body of the cutter of the O'Donnell and Willard patent were eliminated, please compare the resistance which the cutter would oppose to the rotation of such resistance opposed by the cutter as disclosed in the patent.

A. Very little, *in* any, difference would be made, because the part thus removed would be a very small part of the contacting surface of the cutter and the wedge 3.

Q. 149. What have you further to say in such comparison, taking into consideration the close pocketing of the shank of this cutter between the bowl 2 and the respective face of the partition 3?

A. The closely confined fitting of the cutter-shank would minimize, if not entirely destroy, any tendency of the extended portion to resist rotating movement.

Q. 150. Now, with this single shoulder eliminated from the cutter of the O'Donnell and Willard patent and the shank socketed in the space between the bowl and the partition, that is, with the cutter in expanded position, please state whether or not any rotatory action of the cutter would be permitted.

A. No, sir.

Q. 151. Now, please compare this close confinement of the shank of the O'Donnell and Willard cutter with any confinement which you find present

(Deposition of W. W. Wilson.)

or to exist with respect to a cutter of complainant's exhibit "Wilson Patent" and Complainant's Exhibit "Improved Double Reamer and Cutters?"

A. The confinement in these cases is not so close as in the O'Donnell and Willard patent, for the reason that with the dovetail construction more play must be given to the cutter in its bearing and in its contact with the reamer body in order to permit free expansion and collapsion of the cutter. Also, it has been [266] shown to be better practice to give the cutters will not become packed and jammed by sand or cuttings getting in the working surfaces.

Q. 152. Please state what effect, if any, is produced by the provision of the single bit or shoulder 15 or 15' of the O'Donnell and Willard patent with respect to the amount of stock in the body of the cutter at the cutting edge?

A. There is little or no stock added to the body of the cutter at the cutting edge by the increase laterally by the shoulders 15 and 15' in the O'Donnell and Willard reamer.

Q. 153. Now, from your experience in designing and manufacturing oil well tools, please state whether the disclosure of the O'Donnell and Willard patent would enable you or anyone else equally skilled in the art, considering such disclosure as a specification or written instruction, to construct a cutter having a body either like that of Complainant's Exhibit "Wilson Patent" cutter or Complainant's Exhibit "Improved Double Reamer and Cutter" cutter.

(Deposition of W. W. Wilson.)

Mr. LYON.—Objected to as leading, incompetent, no foundation laid and not the best evidence, and not redirect examination.

A. No, sir.

(By consent of counsel an adjournment is now taken until to-morrow, Thursday, April 23, at 2 o'clock P. M. at this same place.) [267]

Office of Raymond Ives Blakeslee, Esq., Solicitor for
Complainant.

Thursday, April 23, 1914, 2 o'clock P. M.

This being the time to which the further taking of proofs on behalf of complainant was continued, proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

W. W. WILSON, recalled.

Redirect Examination (Resumed).

Mr. BLAKESLEE.—As counsel has objected to the last question for various reasons, and among them that the question is not redirect examination, and as we have objected to any questioning of this witness with respect to the O'Donnell and Willard patent which has been under discussion, and as that objection was registered against questioning as to this evidence when the witness E. C. Wilson was under examination, and as manifestly this is not a time for defendant to present its defenses or make out its case, we can only assume that counsel is making the pres-

(Deposition of W. W. Wilson.)

ent witness his own and is attempting to prove his case in part out of the mouth of this witness produced for complainant. Therefore, still urging the objections heretofore made as against the discussion of this purported O'Donnell and Willard patent during these takings of proofs for complainant, and abiding by such ruling as may be made upon such objection, we will extend the latitude of the examination of the present witness commensurate with the assumption that as to this subject of inquiry he is a witness for the defense. It is urged that we may not be denied our right to cross-examine any witness whose testimony is sought with respect to any subject of defense and, therefore, our further [268] questioning of this witness with respect to this purported O'Donnell and Willard patent will, as stated, be conducted with the broader scope and along the broader lines which would be proper on cross-examination of a witness for the defense, and which we contend under the circumstances are proper with respect to the cross-examination of this present witness on this particular subject. As to any other subjects, the inquiry will be kept within the strict lines of redirect examination.

Mr. LYON.—Counsel for complainant may derive any conclusion that he desires from the argument and statement placed on record by him. This is neither the time or place for an argument of the question involved in his statement. Defendant does not accede thereto, and will at the hearing of this cause meet such contention fully. Notice is given complainant that if the witness is examined further on the subject

(Deposition of W. W. Wilson.)

of the O'Donnell and Willard patent, defendant will insist that it is a waiver of the pretended objection that the subject of the O'Donnell and Willard patent is not cross-examination, and, clearly, if it is not cross-examination it cannot be the subject of redirect examination. The difference between the subject of question 153 asked this witness on redirect examination and on cross-examination of this witness in regard to the subject matter of the O'Donnell & Willard patent will become apparent at the hearing of this cause. Defendant disclaims making this witness a witness on behalf of defendant for any purpose whatsoever. The questions asked this witness in regard to the O'Donnell & Willard patent are competent cross-examination for the purpose of testing the ability of this witness as an alleged expert, if for no other purpose.

Mr. BLAKESLEE.—There is a time, of course, and a place, for presenting defenses in suits of this sort, and under the guise of testing the expertness of this witness it is contended that the defendant cannot make his case on his defenses out of [269] the mouth of the witness for the complainant. We understand counsel to imply that we cannot examine this witness either in redirect or in cross-examination as to the subject of this O'Donnell and Willard patent. We cannot adopt this view of the situation, and we propose to examine him in the most advantageous method and leave it to the Court to determine the whole question of the propriety of examining this

(Deposition of W. W. Wilson.)

witness at all at this time and in these proceedings, upon the subject of this O'Donnell and Willard patent. We do not proceed in this direction solely because of the objection made by counsel to question 153, but in order that we may exercise our undoubted rights to cross-examine any witness in connection with whose testimony matters purely of defense are brought into the case. If the Court rules that all of this testimony on the O'Donnell and Willard patent taken at this time in connection with these *prima facie* proceedings should be ruled out and withheld from consideration, such ruling will not be contrary to our expectations. However, if any of it is to be considered, we wish this matter to be presented in a manner which is commensurate with our rights on this subject.

Mr. LYON.—Defendant insists that complainant has no right to “cross-examine” this witness.

Q. 154. (By Mr. BLAKESLEE.) Do you find any dovetails or lateral projections upon the shanks of the cutters of the O'Donnell and Willard patent?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 155. (By Mr. BLAKESLEE.) Do you take it that any rotation of the cutters of the O'Donnell and Willard patent is possible when the shanks thereof are pocketed in the spaces between the partition 3 and the bowl 2?

Mr. LYON.—Objected to as leading.

A. No, sir. [270]

Q. 156. (By Mr. BLAKESLEE.) Do you find

(Deposition of W. W. Wilson.)

more than one shoulder or enlargement upon the cutters of the O'Donnell and Willard patent reamer?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 157. (By Mr. BLAKESLEE.) Do you find disclosed in the O'Donnell and Willard patent any object or purpose for this one shoulder, other than to impart an up-thrust of the cutters to the bowl and to cooperate with the shoulder upon the lower end of the casing in causing the collapsion of the cutters?

Mr. LYON.—Objected to as leading and suggestive.

A. No, sir.

Q. 158. (By Mr. BLAKESLEE.) Do you find on the cutters of the O'Donnell and Willard patent reamer any lateral extensions or shoulders which are developed clear to the bottoms or cutting edges of the cutters so that the cutting edges are widened substantially to the extent that the upper portions of the body of the cutters are widened.

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 159. (By Mr. BLAKESLEE.) As a matter of fact, in the O'Donnell and Willard cutters there is nothing but a slight enlargement of the body of the cutter at each side, diminishing toward and disappearing at the cutting edge of the cutter? Is that not correct?

Mr. LYON.—Objected to as leading and suggestive.

A. Yes, sir.

(Deposition of W. W. Wilson.)

Q. 160. (By Mr. BLAKESLEE.) And taking into account the mass of the rest of the cutters and the stresses and strains which tend to cause rotation of the reamer-cutters, do you consider that these slight diminishing side enlargements are or would be materially effective in opposing any rotation of the cutters or any [271] tendency of the same to rotate, should such rotation be possible?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 161. (By Mr. BLAKESLEE.) Do you find at or adjacent to the cutting edges of the cutters of the O'Donnell and Willard patent reamer any material increase in mass of metal which might serve to materially prolong the life of the cutters by providing extra metal for dressing out the cutters adjacent to the cutting edges?

Mr. LYON.—Objected to as leading, and upon the further ground that it is irrelevant and immaterial to the issues of this suit, inasmuch as the issues of this suit are directed solely to the underreamer-cutter as an article of manufacture, and do not embrace and involve the mode of operation of an underreamer as a whole, and, therefore, the mode of operation or principle of action of an underreamer-cutter when allied with the other parts of the underreamer can form no part of the issues of this case; and the testimony of this witness shows plainly that the theory of rotation of the cutter advanced by this witness has to do with the co-operation of the cutter of the underreamer with the parts and surfaces of the body there-

(Deposition of W. W. Wilson.)

of to which it is allied, and that such rotation is incidental to the co-operative action of the cutter in and with such underreamer body and surfaces, and not inherent in the article of manufacture, to wit, the cutter itself *per se*, and that such rotation is not in the cutter itself, nor is there any action of the cutter itself causing rotation of any of its parts, and that such rotation cannot take place except in conjunction with other parts in forming any part of either Claim 16 or 17 of the patent in suit or involved in this litigation.

Mr. BLAKESLEE.—Although we do not, as by this time will be manifest, agree with the views of counsel with respect to this objection discussed at length by him, we may point out that from [272] the viewpoint of his remarks it must be proper to consider the advantages attaching to an underreamer-cutter having special or particular features as one of the objects of invention is to better meet the service and uses to which a patented thing is to be put. If, for instance, it be established that rotation of cutters is an objectionable and prevalent trouble in underreaming, it certainly would be proper to point out that a patented underreamer-cutter which in use would eliminate such rotative trouble, was better and an improvement over prior cutters in that respect. The discussion of a patented improvement certainly cannot be limited to its inherent aspects and qualities, but must also in a fair and proper discussion of an invention go into the advantages of such inherent qualities and characteristics. Furthermore, it is to be pointed out that the last question related to the

(Deposition of W. W. Wilson.)

cutting edge of the cutter, and it is assumed that it is proper to discuss the work for which the cutter is designed.

Mr. LYON.—The further objection is urged to this entire line of examination and to all portions of the testimony of this witness, or any other witness in this case, with reference to the mode of operation or principle of action of an underreamer-cutter when in position as a part of an underreamer, that the complainant herein is estopped from claiming that Claims 16 and 17 embrace or can be limited to or held to embrace any other portion of the underreamer than the underreamer-cutter *per se* as an article of manufacture, for the reason that on March 16, 1906, by the office action of rejection as shown by paper No. 4, forming part of complainant's exhibit "Wilson File Wrapper and Contents," the original claims 16 and 17 were rejected on the patent to Edward Double, No. 748,054, upon the grounds stated by the commissioner of patents, as follows: "Furthermore, the article of manufacture cannot be limited by the device with which it is used." Complainant acceded to such rejection and position taken by the patent office, and [273] amended the said claims to avoid the objection and rejection just quoted, and he is therefore estopped from making a contention in opposition to the position thus taken by the complainant in the patent office, or claiming that claims 16 or 17 are commensurate with or cover the underreamer in connection with the said article

(Deposition of W. W. Wilson.)

or manufacture, to wit, underreamer-cutter or cutters.

Mr. BLAKESLEE.—Although this record shows that the questions or subjects of mode of operation and principle of action have been industriously followed in the examination of witnesses by counsel for the defendant, in fact under our repeated objections, we are nevertheless obliged to counsel for pointing out at this time the quoted matter of paper No. 4 of the "File Wrapper and Contents," being complainant's Exhibit "Wilson File Wrapper and Contents." Such quoted matter very nicely, we submit, supports our contention that "the article of manufacture cannot be limited by the device with which it is used." We are attempting to prove that these cutters were not limited to those features of underreamer construction which are disclosed in complainant's exhibit "Wilson Patent," but have been shown to be susceptible of adaption to the specific features of construction of defendant's underreamer. In fact, it is our position exactly that this underreamer-cutter with its various features of improvement is adaptable to the varying conditions of service and to combination with various other general features of underreamer construction, and that is what we are attempting to prove in this case. In order to so prove our contentions, it is necessary for us to show what this improved underreamer-cutter is capable of doing, what its features of advantages are and how versatile it is under any conditions of service within which its great advantages

(Deposition of W. W. Wilson.)

are susceptible of demonstration. Therefore, while not limiting the improved cutters to any specific underreamer organization, we are simply attempting [274] to show how such cutters co-operate with the remaining portions of complainant's and defendant's underreamer organizations.

A. No, sir.

Q. 162 (By Mr. BLAKESLEE.) Do you take it that this single ledge or rib or shoulder upon the cutters of the O'Donnell and Willard patent underreamer in any way answers the purpose which you have discussed of the two lateral shoulders upon the bodies of the cutters of complainant's exhibit "Wilson Patent" and complainant's exhibit "Improved Double Reamer and Cutters" cutters?

Mr. LYON.—Objected to as leading and incompetent, and not the best evidence, and calling for a mere conclusion of the witness and not for a statement of facts.

A. No, sir.

Q. 163. (By Mr. BLAKESLEE.) Now, as to the question of in-trust tilting of these cutters of the O'Donnell and Willard patent reamer, do you think that the terminal portions of *the* this single ledge or rib or shoulder upon this reamer materially assists the cutters in imparting in-trust to the hollow-slotted extension or partition disposed between the cutters?

Mr. LYON.—The same objection.

A. No, sir.

Q. 164. (By Mr. BLAKESLEE.) In an under-

(Deposition of W. W. Wilson.)

reamer having cutters designed like those of the O'Donnell and Willard patent, namely, with shanks of increasing width calculating from the upper ends of the shanks downwardly, such shanks being closely pocketed in the spaces between the bowl 2 and the partition 3 when the cutters are in expanded position, is there any necessity for any enlargement of the bodies of the cutters laterally to oppose any rotatory tendency of the cutters?

Mr. LYON.—Objected to as leading and as irrelevant and immaterial to the issues of this suit, for the reasons before stated in full. [275]

A. No, sir.

Q. 165. (By Mr. BLAKESLEE.) When you testified in answer to question 116 on page 118 of the record, that the lower ends of the bits are extended out or projected out at right angles to the shank of the bit or cutter, forming the shoulder, you intended to convey the idea that such slight extensions were merely the terminal portions or ends of the single shoulder developed in the curve of the outer face of the bits or cutters, did you not?

Mr. LYON.—Objected to as leading and suggestive.

A. Yes, sir.

Q. 166. (By Mr. BLAKESLEE.) Would it be possible to insert a cutter constructed such as the disclosure in the O'Donnell and Willard patent in a reamer constructed substantially in accordance with the specifications and drawings of Complainant's Exhibit "Wilson Patent," or in the reamer body,

(Deposition of W. W. Wilson.)

being Complainant' Exhibit "Improved Double Reamer and Cutters," so that such O'Donnell and Willard patent cutter would be operative and expand and contract properly, assuming that the sides of such cutter were prepared to permit of its introduction in the new environment with the closest or most perfect working fit which could be provided?

Mr. LYON.—Objected to as leading, and irrelevant and immaterial to the issues of this suit, and as incompetent, the witness not having qualified to answer the question.

A. No, sir.

Q. 167. (By Mr. BLAKESLEE.) Would the addition of dovetails or ledges upon the shank of such O'Donnell and Willard patent reamer bit or cutter, without the provision of the two distinctly produced and provided lateral shoulders, upon the body of such cutter, and extending clear down to and including part of the cutting edge of the cutter—would such O'Donnell and Willard patent reamer-cutter serve the purposes and have the [276] advantages and attributes of a cutter such as that disclosed in Complainant's Exhibit "Wilson Patent"?

Mr. LYON.—Objected to as leading and calling for a mere conclusion, and an expression of opinion of the witness and not for a statement of facts, and therefore incompetent. Further, on the ground that it is indefinite and uncertain as to what alleged advantages and attributes are referred to.

A. No, sir.

Q. 168. (By Mr. BLAKESLEE.) You have

(Deposition of W. W. Wilson.)

been engaged in the manufacture or assisted in the manufacture of underreamers and cutters thereof for some years, have you not? A. Yes, sir.

Q. 169. And in giving your last answer have you taken into consideration all such experience and all of the lessons and teachings which have resulted from such experience in underreamer and underreamer-cutter manufacture?

Mr. LYON.—Objected to as leading.

A. Yes, sir.

Q. 170. (By Mr. BLAKESLEE.) And the provision of this single up-thrust imparting a collapse-assisting shoulder upon the cutter of the O'Donnell and Willard patent underreamer in no wise increases the width of the cutting edge of the cutter, does it?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 172. (By Mr. BLAKESLEE.) From your observation in the market and in the field of the reamers produced and sold by the defendant Union Tool Company, have you ever seen a defendant's underreamer provided with a cutter or cutters constructed and organized in accordance with the disclosure of the cutter in the O'Donnell and Willard patent, irrespective of any other features of the underreamer?

Mr. LYON.—Objected to as leading and calling for a [277] mere conclusion and statement of opinion of the witness, and not for a fact, and incompetent and not the best evidence.

A. No, sir.

(Deposition of W. W. Wilson.)

Q. 173. (By Mr. BLAKESLEE.) Now, referring to Complainant's Exhibit "Old Style Double Reamer-cutter No. 1," what do you find to be the surface formation of the inner face of the body of the cutter at the expansion portion thereof?

A. The rectangular plane surface.

Q. 174. Please apply to this surface some straight-edge or flat surface and state whether this surface of the cutter is true?

A. No, sir; the same is rounded near its lower edge, probably by the dressing operations and wear, and the remainder of it above this point is rounded slightly along a vertical axis.

Q. 175. In which direction is the rounding found to extend?

A. The axis of the rounding is parallel to the axis of the cutter.

Q. 176. In other words, the curve of the rounding extends transversely of the surface?

A. Yes, sir.

Q. 177. Referring to a cutter of Complainant's Exhibit "Improved Double Reamer and Cutters," please apply a straight-edge to the thrust-bearing surface on the body of this cutter, and tell us what comparison you find in the respects last mentioned between such surface and the surface of the old style cutter.

A. The surfaces are very nearly straight. They have been slightly warped at the lower edges, due to dressing.

Q. 178. From your knowledge of underreamers

(Deposition of W. W. Wilson.)

in manufacture and use, and your observation of Double underreamers in the field, have you any explanation to offer as to this difference [278] in the surface confirmation between the thrust-bearings of these two reamers?

A. This rounding in the old style Double underreamer-cutter No. 1 is due to the wearing of the thrust-bearings, caused by rotating action of the cutters. This action has been resisted effectively in the Complainant's Exhibit "Improved Double Reamer and Cutters," cutter by the lateral extension of the thrust-bearing, and is therefore absent.

Q. 179. Have you had occasion to examine other old style and improved Double underreamer-cutters in the field after the same have been used in the same manner as you have compared these particular cutters before us?

A. Yes, sir; I have examined them often, or many times.

Q. 180. How have you found the conditions on examination to compare with the conditions which you have found just now? A. Identical.

Q. 181. Referring to Complainant's Exhibit "Wilson File Wrapper and Contents" and to the photographic print of the drawing therein, marked "Exhibit A," and stamped with the date "Feb. 28, 1914," and referring to the edge view of a cutter adjacent to the lower right-hand portion of that drawing, and likewise to the inner-face view of a cutter at the bottom of that drawing, have you anything to say as to the showings of these views in comparison

(Deposition of W. W. Wilson.)

or as to the formation of the bodies of the cutters shown therein? That is, from your understanding of this drawing?

Mr. LYON.—Objected to as incompetent and not the best evidence, and not calling for a statement of facts.

A. In the view of the edge view of a cutter noted thereon “side” in reference to the extension of the metal forming the dovetail shank, and the main portion of the shank between the dovetails outward, the line of extension is seen to be continuous between the thrust-bearing surfaces on the shoulders of the cutter bearing surfaces on the shoulders of the cutter [279] body. It will be noted that this line is continuous above and below, and is carried out back of the extension of the thrust-bearing surface by two dots, so that in the machining operation this entire face could be machined with one setting. Thus the thrust-bearing faces are independent and distinct from any plane surface on the back of the cutter body.

Q. 182. (By Mr. BLAKESLEE.) Comparing these two views with figures 8 and 9 of Complainant’s Exhibit “Wilson Patent,” please state whether or not any essential differences in the use of the cutters of the print are developed, comparing the same with the cutters of the drawing of the patent. A. No, sir.

Q. 183. Now, referring to Complainant’s Exhibit “Old Style Double Underreamer-Cutter No. 1,” do you find on the same any lateral shoulder or shoulders corresponding to those on a cutter of Complain-

(Deposition of W. W. Wilson.)

ant's Exhibit "Improved Double Underreamer and Cutters" cutter? A. None.

Mr. Lyon.—Objected to as leading.

A. No, sir.

Q. 184. (By Mr. BLAKESLEE.) Do you find any portion of the thrust-bearing bearing upon the old style Double reamer-cutter which projects beyond the supplementary dovetails or ledges upon the shank of the cutter?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 185. (By Mr. BLAKESLEE.) Do you find in this cutter any material increase of the dimensions of the body of the cutter below the thrust-bearing portion over the transverse dimensions of the thrust-bearing portion?

Mr. LYON.—Objected to as leading.

A. No, sir. [280]

Q. 186. (By Mr. BLAKESLEE.) Then, am I correct as understanding, as a summary of this testimony, that you do not find upon this old style Double cutter any lateral extensions or shoulders similar to those of Complainant's Exhibit "Wilson Patent" or Complainant's Exhibit "Improved Double Reamer and Cutters" cutter?

Mr. LYON.—Objected to as leading, calling for a conclusion of the witness and not for a statement of fact, and not the best evidence.

A. No, sir.

Q. 187. (By Mr. BLAKESLEE.) Now, referring to this old style Double Reamer Cutter No. 1,

(Deposition of W. W. Wilson.)

how do you account for the slight increase of its body below the thrust-bearing portion?

Mr. LYON.—Objected to as incompetent, the witness not having qualified to answer the question; that it is calling for a mere expression of opinion of the witness and not for a statement of facts, and that it appears from the testimony of this witness that he knows nothing whatever of the antecedents of this particular cutter exhibited, nor did he ever see the same as it was manufactured by the defendant company, if it was ever manufactured by the defendant company, and on the further ground that it is irrelevant and immaterial in any view of the case, as it is admitted on behalf of complainant in this suit that such cutter itself was made and was used in the form here shown prior to the alleged invention by complainant of the underreamer-cutter shown or described in the patent in suit.

A. I believe this enlargement to be due to the upsetting of the metal at these points by the operation of dressing the cutters, which is done for the purpose of keeping the cutting edge out to the proper diameter to which it is desired to ream the hole, and which must be done from time to time as the cutting edge wears. [281]

Mr. LYON.—We move to strike the answer from the record and exclude it from consideration on the grounds stated in the objection.

Q. 188. (By Mr. BLAKESLEE.) Have you seen old style Double underreamer-cutters in which the body beneath the thrust-bearing was substan-

(Deposition of W. W. Wilson.)

tially the same width as the thrust-bearing

Mr. LYON.—Objected to as leading.

A. Yes, sir.

Q. 189. (By Mr. BLAKESLEE.) Do you consider that the slight extensions of the thrust-bearing of this cutter due to the provision of the auxiliary dovetails or ledges on the shanks are or are not material with respect to opposing any rotatory tendency of the cutter or imparting in-thrust from the cutter to the body of the reamer?

Mr. LYON.—Objected to on each of the grounds stated in the objections to the preceding question, and particularly upon the ground that it is leading and incompetent and calling for a mere conclusion and not for a statement of facts.

A. They are not material.

Q. 190. (By Mr. BLAKESLEE.) Now, in Complainant's Exhibit "Improved Double Reamer and Cutters," what parts of the thrust-bearings of the cutters rock upon the hollow-slotted extension of the body of the reamer?

Mr. LYON.—Objected to as irrelevant and immaterial to the issues of this case.

Mr. BLAKESLEE.—The question is withdrawn.

Q. 191. Now, in Complainant's Exhibit "Improved Double Underreamer and Cutters," upon what part or parts of the hollow-slotted extension do the lateral extensions or shoulders of the cutters rock?

Mr. LYON.—The same objection. [282]

A. On that part of the parallel bearing faces of

(Deposition of W. W. Wilson.)

hollow-slotted extension lying below and outside of the planes formed by the backs of the dovetailed grooves of the body.

Q. 192. (By Mr. BLAKESLEE.) Do you find in Complainant's Exhibit "Old Style Double Underreamer Body" any parts on the body corresponding to these parts just pointed out?

Mr. LYON.—Objected to as leading.

A. No, sir.

Q. 193. (By Mr. BLAKESLEE.) And to the extent that the cutters of Complainant's Exhibit "Improved Double Reamer and Cutters" rock on the portions defined of the body at the lateral extensions, am I correct in understanding your previous testimony that these lateral extensions participate in the expanding actions of the cutter?

Mr. LYON.—Objected to as leading and incompetent, and not the proper method of proof, and the record speaks for itself what the testimony of the witness is, and the understanding which counsel may have or may not have from such testimony is immaterial. The witness should state facts. It is incompetent and improper for complainant's counsel to state his understanding of a matter and ask the witness simply to nod his head.

Mr. BLAKESLEE.—We are not aware that the witness has been giving audible noddings, but there is such an extensive objection to the question that we will restate it and depart from our attempt to prevent what we consider an unnecessary elaboration of the record.

(Deposition of W. W. Wilson.)

Q. 194. (By Mr. BLAKESLEE.) Will you please state what if any relation this rocking of the lateral extensions of the cutters of Complainant's Exhibit "Double Reamer and Cutters" upon the co-operating extensions of the hollow-slotted extension has or bears to the expanding action of the cutters?
[283]

Mr. LYON.—Objected to as irrelevant and immaterial to the issues of this suit, and needlessly incumbering the record.

A. It has no relation to the expanding action of the cutters.

Q. 195. (By Mr. BLAKESLEE.) During this rocking action of the cutters does any part of the expansion take place?

Mr. LYON.—The same objection as last noted.

A. If the cutter is moving up or down with relation to the reamer body, there is a contraction or expansion taking place, due to the upwardly and inwardly declined dovetailed ways drawing the upper ends of the cutters together.

Q. 196. (By Mr. BLAKESLEE.) Then during such action what, if any, relation exists between the expansion or contraction of the cutters and the rocking of these lateral extensions of the cutters upon the lateral extensions of the hollow-slotted extension?

A. During that movement of the cutter the cutter is pivoted at or near this point.

Q. 197. Is that a pivotal point or fulcrum point, or part of an extended fulcrum point or fulcrum area?

(Deposition of W. W. Wilson.)

Mr. LYON.—Objected to as leading and suggestive, irrelevant and immaterial.

A. It is part of an extended fulcrum point.

Q. 198. (By Mr. BLAKESLEE.) Please state the location of this fulcrum area upon the cutter.

A. It is a horizontal line of contact of the spreading-bearing surface of the cutter where it contacts with the hollow-slotted extension of the body.

Q. 199. Now, referring to what you have previously referred to as the tops of the lateral extensions of the cutters of this exhibit, please state whether or not these tops, that is, at [284] the lines of intersection of the bearing-faces and the inclined surface leading downwardly and rearwardly therefrom, in any way co-operate with the spreading-bearings upon the body in the expanding or contracting of the cutters.

Mr. LYON.—Objected to as leading. On the further ground that it is irrelevant and immaterial to the issues of this suit.

A. There is an instant in the expansion and contraction action of the cutters, while the bearing-face is traveling in contact with the sides of the hollow-slotted extension, when the line of contact of the lower corner of the parallel bearing-face coincides with the line of the upper edges of the lateral extensions of the shoulders on the cutter. At this instant this edge becomes a fulcrum point about which the cutter is expanding.

Q. 200. (By Mr. BLAKESLEE.) Is there, or is there not, any wedge action in contradistinction

(Deposition of W. W. Wilson.)

from physical action at those top lines?

Mr. LYON.—Objected to as leading, and upon the grounds stated in the preceding objection.

A. No, sir.

Mr. BLAKESLEE.—Counsel may recross.

Mr. LYON.—With the same reservation stated upon the record prior to the commencement of the cross-examination of this witness, and subject to such reservation and to the motion to strike the testimony of this witness from the record and exclude it from consideration on the ground that it is taken out of order, and to follow and abide by such ruling, I will further examine the witness.

Recross-examination.

(By Mr. LYON.)

Q. 201. Mr. Wilson, you have referred to a small groove or cut in the thrust-bearing of the so-called “improved style” Double cutters, forming a part of Complainant’s Exhibit “Improved [285] Double Reamer and Cutters.” What function, either as a part of the cutter or in the expansion or collapsion of the cutters of the so-called “improved Double reamer,” or in reaming, or in any other action, does the same perform?

Mr. BLAKESLEE.—Objected to as not recross examination.

A. This notch permits access of a threaded bolt to the spring-actuated rod or mandrel for the purpose of drawing the cutters down and of relieving the strain on the key, so that it may be withdrawn. Also, it serves to remove the metal at the center of the

(Deposition of W. W. Wilson.)

thrust-bearing which in case rocking occurred would tend to pile up and form a fulcrum point on which the cutter could rock.

Q. 202. (By Mr. LYON.) Then do you understand that in the so-called Double improved reamer such a groove is necessary in the thrust-bearing of the cutter to enable such underreamer to expand and contract the bits in accordance with their normal mode and principles of operation?

A. Yes, sir.

Q. 203. The said thrust-bearing extends above the upper end of this groove in the solid surface across the width of such bearing and out to even with the commencement of what you have termed the right-angles shoulders formed below the upper end of this groove? Is that correct?

Mr. BLAKESLEE.—Objected to as calling for testimony directed purely to the showing of the exhibit and not a comparison with anything else, or contrary to anything else, and therefore not calling for the best evidence, which is the exhibit. The necessity of defining in this case is not seen.

A. In the cutters shown in the exhibit there is a slight extension of this groove to the top of the inner thrust-bearing.

Q. 204. (By Mr. LYON.) Place your hand upon that portion of both the cutters to which you have last referred and state [286] whether or not both of them have not been hollowed out by being hammered, and *is* said hollow at that point is not of greater area

(Deposition of W. W. Wilson.)

or extent laterally than the cross-sectional area of the groove?

Mr. BLAKESLEE.—The same objection, that it is calling for a conclusion and is not recross-examination.

A. I am unable to state how this is caused.

Q. 205. (By Mr. LYON.) The depression to which I have just directed your attention exists, does it, in both of said cutters?

Mr. BLAKESLEE.—The same objection.

A. I believe so; yes, sir.

Q. 206. (By Mr. LYON.) Do you know of your own knowledge by whom these two cutters of Complainant's Exhibit "Improved Double Reamer and Cutters" were made, or by whom they were last dressed?

Mr. BLAKESLEE.—Objected to as not cross-examination.

A. No, sir.

Q. 207. (By Mr. LYON.) I believe you stated in this case that you were a witness on behalf of the defendant Wilson & Willard Manufacturing Company in suit in equity in the Circuit Court, No. 1540, pending in this court, wherein the Union Tool Company are complainants and the Wilson & Willard Manufacturing Company are defendants, for infringement of the Double patent No. 734,833, dated July 28, 1903. In your deposition in that case and on December 2, 1912, you were asked the following questions and gave the following answers: "Q. 53. Have you examined 'Defendant's Exhibit O'Donnell & Willard

(Deposition of W. W. Wilson.)

Reamer'? A. I have. Q. 54. Will you please compare and contract the same with 'Complainant's Exhibit Double Patent' and the disclosure thereof? A. In each there is a body with means for connecting to a string of tools at the top. The body is hollowed out along its axis for [287] admission of spring and cutter retaining rings, access to which is had in the Double patent by a joint in the body, and in the O'Donnell & Willard underreamer the lower partition furnished at its upper end with a plug threaded into the body at that point, thus allowing admission to the spring chamber. The lower end of the mandrel rod in the Double reamer has a movable key, while in the O'Donnell & Willard it consists of a solid T-head on the rod. The ends of this T bear against the upper portions of slots in the cutter-shank, as does the key in the Double reamer. The cutters on being withdrawn in the O'Donnell & Willard reamer close together over the lower portion of the removable partition. In the Double reamer they close together over a stationary partition between the cutters. This partition in both cases has a hole for movement of the cutter supporting rod, and in both cases is furnished with a suitable slot, which is long enough to permit travel of the key or T to give suitable movement for the cutting. The cutters in the O'Donnell-Willard reamer have shanks which fit into pockets formed in the end of the body. The outer faces of these pockets are tapered inwardly at their upper ends, causing the cutters at their upper ends to be drawn together as the reamer is expanded. In the Double underreamer, a

(Deposition of W. W. Wilson.)

similar action is accomplished by the dovetailed ways, which dovetail ways are tapered together at their upper ends. The collapsing of the cutters in both cases is caused by the cutters dropping down over the end of the partition, and also by the outward tilting of the upward end of the cutters, caused in the one case by the tapered pockets and in the other by the tapered dovetail ways. The bearing of the cutters at their upper ends is taken by suitable shoulders on the body in both cases. In the Willard-O'Donnell reamer, additional bearing-faces are furnished by the shoulder at the upper part of the cutter body, bearing [288] against the lower outer edge of the cutter pocket. The methods of operation are the same." I have correctly quoted said questions and answers from said depositions?

A. Yes, sir.

Q. 208. And in said suit on December 6, 1912, you were recalled to the stand and asked the following questions and gave the following answers: "Q. 343. I now show you 'Defendant's Exhibit O'Donnell and Willard Patent' and ask you if you are familiar with the disclosure thereof? A. Yes. Q. 344. Will you please briefly summarize the disclosure of this patent? Mr. LYON.—Objected to on the same ground as stated in the objection to the patent, to wit, that the patent on its face shows that it was not a publication nor was it granted or issued or patented until years after the date of the application by Edward Double for the patent sued on herein. Mr. BLAKESLEE.—And again we would state that

(Deposition of W. W. Wilson.)

the defense which will be urged pertinent to this patent is that the application therefor was co-pending with the application for the 'Complainants' Exhibit Double Patent' and was of an earlier date of filing in the patent office. Mr. LYON.—This defense being subject to our objections heretofore entered of record, subject to the possibility of an amendment of the answer or other disposition. A. This patent covers an underreamer consisting of a solid body having means of attachment to suitable tools at the top, and having a tapering hole bored centrally in the lower end of the body for a distance, above which there is a straight hole for the reception of a spring and T-rod. In the upper end of the tapered hole there is a threaded portion into which a wedge-shaped piece shown at 3 in the drawing, which wedge-shaped piece is provided at its top with a threaded portion and may be made to engage with the threaded portions of the body. The wedge-shaped portion 3 has drilled through its upper portion a hole 6 for the passage of the mandrel rod, and below this hole is a slot 4 to allow movement of [289] the laterally extending lugs of the lower end of the T-rod, said slot being long enough to allow sufficient play to the T-rod to give proper action to the cutters. On the lugs of the T-rod, fastened thereto by slots threading over these lugs, are two cutters 12 and 12'. These cutters have shanks which are arranged to fill the cavity on each side of the wedge portion 4 when the cutters are in expanded position. Below these shanks of the cutters are bodies terminating at their lower ends in outwardly projecting

(Deposition of W. W. Wilson.)

cutting faces. The upper portion of the mandrel rod has around it a spring, which spring bears on its lower end on the threaded plug, on the upward end of the partition 4, and the spring at its upper end bearing against threaded nuts which are screwed on the threaded portions of the top end of the mandrel rod. This spring being in compression, tends to draw the cutters to expanded position. The collapsing of the cutters is caused by their sliding downward over the wedge-shaped piece 3 which allows the lower ends of the cutters to come together. Also, the upper ends of the cutters ride outwardly, bearing against the outer walls of the tapered pockets, allowing them to tilt outwardly, causing the further contraction of the cutters, due to the tilting over the fulcrum, over contraction of the cutters, due to the tilting over the lower end of the wedge-partition 3. To maintain the wedge-shaped portion 3 in position when the tool is being used, there are plugs 28 which pass through holes in the side of the body and are threaded into the wedge-shaped portion 3, preventing it from unscrewing out of the body. The reamer is also provided with a locking device for locking the cutters into reaming position when below the casing. This locking device consists of a plug 21 which slides sideways in the hold in the wedge-shaped portion 3 and extends outward through the body through suitable holes. This plug has behind it another plug which has a tapered face 17, which may pass underneath the lower end of the T-rod. Behind this plug 16 there is a spring which [290] bears against it,

(Deposition of W. W. Wilson.)

at one end, and on the other end bears against a threaded button 19, to hold it in place. When the reamer is run in the casing the plug 21 is pressed inwardly, causing plug 16 to be thrown back in such position that the beveled face of 23 on the mandrel rod engages the bevel face 17 on the inner plug 16, so that the mandrel rod may be drawn down by means of the cutters, forcing the plug 16 back, compressing the spring 20, allowing the cutters to be withdrawn and collapsed. When the reamer is run in the hole the sides of the bodies of the cutters bearing against the casing hold them in collapsed position until the cutter passes the shoe, when this pressure is released, allowing the spring to draw the cutters up into the working position. This movement of the mandrel rod upward, frees plug 16, allowing it to press against the plug 21. When the reamer is further lowered allowing the plug 21 to move past the shoe, it is forced outward against the shoulder 25 allowing the plug 16 to move still further in, so that there is a plane surface bearing against the bottom of the mandrel rod holding it in that position. Thus the cutters are locked and cannot be withdrawn or displaced when beyond the casing. When the reamer is withdrawn from the casing the plug 21 first strikes the shoe, causing it to move inwardly, which causes, the plug 16 to move to such position that the shoulder 17 may be engaged by the mandrel rod. On further withdrawing the reamer from the casing the casing shoe strikes the shoulders on the cutters causing them to be drawn downward, the tapered shoulder

(Deposition of W. W. Wilson.)

23 on the lower end of the mandrel rod striking the beveled face 17 on the plug 16 and causes it to be thrown further over against the compression of the spring, allowing the cutters to be drawn downward into collapsed position when the reamer may be withdrawn from the casing. Q. 345. Can you produce

upon a small scale a mechanical embodiment of any features disclosed in 'Defendant's Exhibit, O'Donnell and Willard Patent'? [291] A. I can.

Q. 346. Please do so. (Witness produces a small brass model.) Q. 347. Will you please compare

this model with the 'Defendant's Exhibit O'Donnell and Willard Patent'? A. The model is a disclosure of the O'Donnell and Willard Patent with the exception that the pins 28 for retaining the wedge-shaped partition in place are not shown in the brass model. Also, the locking means consisting of plug 19, spring 20, plug 16 and plug 21, shown in the patent drawing, are not present in the brass model.

Q. 348. Please state where you got this brass model.

A. This model was made at the Wilson & Willard Manufacturing Company in compliance with the disclosure of the patent about the time that I was first employed at the Wilson & Willard Manufacturing Company. Q. 349. Please state what you know

personally as to its manufacture. A. I handled the orders on the books at the time it was made at the Wilson and Willard Manufacturing Company and saw it in construction at that time. Mr. BLAKESLEE.—The small brass model just discussed is offered in evidence as 'Defendant's Exhibit Partial

(Deposition of W. W. Wilson.)

O'Donnell and Willard Underreamer on Diminutive Scale.' Mr. LYON.—Objected to as incompetent and as fragmentary and as not embodying either the construction or mode of operation of the disclosure of the O'Donnell and Willard Patent, and as misleading. Q. 350. (By Mr. BLAKESLEE.) Have you examined 'Defendant's Exhibit O'Donnell and Willard Underreamer'? A. I have. Q. 351. Please compare the same with the disclosure of 'Defendant's Exhibit O'Donnell and Willard Patent.' A. The 'Defendant's Exhibit O'Donnell and Willard Underreamer' differs from the disclosures of the O'Donnell and Willard Underreamer Patent in that there are no locking means as shown by plug 19, spring 20, plugs 16 and 25, present in the O'Donnell and Willard Underreamer. The O'Donnell and Willard underreamer exhibited also differs from the patent in that there is placed on the upper portion of the body a ring, which ring has in its upper portion a key which passes [292] through a slot in the body over the top of the T-rod and at 90 degrees around the circumference of this ring there are casing engaging means which extend outward to a greater diameter than the inside of the casing when the reamer is in expanded position. In the body underneath these casing engaging means are suitable slots so arranged that when the engaging means are drawn downward sufficient to compress the springs they may move inward to a contracted position in the reamer body, their outside diameter then being equal to or less than the inside of the

(Deposition of W. W. Wilson.)

casing. This device is used for the purpose of holding the spring in compressed position, and, therefore, reduces its upward pressure on the cutters when the reamer is being run into or out of the casing.

Q. 352. Please state more fully, according to your understanding, what the ring on top is for that you refer to. A. As I have stated, that is for the purpose of holding the cutters in contracted position, or, at least, taking off the main strain of the spring from the cutters when running in and out of the casing, particularly down the casing.

Q. 353. Please now compare 'Defendant's Exhibit O'Donnell and Willard Reamer' with 'Defendant's Exhibit Partial O'Donnell and Willard Reamer on Diminutive Scale.' A. The only difference between 'Defendant's Exhibit O'Donnell and Willard Underreamer' and 'Defendant's Exhibit O'Donnell and Willard Underreamer on Diminutive Scale' is the size of the two reamers. Also the pin for holding the wedge to prevent its unscrewing when in use, are not present in the brass model on a diminutive scale, but they are present in 'Defendant's Exhibit O'Donnell and Willard Underreamer.' Also the ring device with key and lugs shown in 'Defendant's Exhibit O'Donnell and Willard Underreamer' are not present in 'Defendant's Exhibit O'Donnell and Willard Underreamer on Diminutive Scale.' Q. 354. Now please state how the absence from 'Defendant's Exhibit O'Donnell and [293] Willard Reamer, and 'Defendant's Exhibit Partial O'Donnell and Willard Reamer on Diminutive Scale' of the features dis-

(Deposition of W. W. Wilson.)

closed in 'Defendant's Exhibit O'Donnell and Willard Patent,' as to which you have testified, affect, if such features do, by their absence, the operation of these two mechanical exhibits. A. The only features absent are the means for locking the cutters in expanded position when below the casing, consisting of plug 19, spring 20, plug 16 and plug 25. This locking device was for the purpose of holding the cutters in case such formations should be encountered which would cause the cutters on the reamer to be withdrawn on the up-stroke of the tools when working. Such conditions, however, do not exist except seldom, and the locking means could be dispensed with without affecting the operation of the tool except in very sticky formations. Q. 355. Please state whether in encountering such unusual or sticky formations in the operation of the reamer disclosed in 'Complainants' Exhibit Double Patent' and of the reamers disclosed in 'Complainants' Exhibit Double Patent' and 'Complainants' Exhibit Wilson Patent' and 'Defendant's Exhibit Double Patent' would or would not tend to cause the same action of the cutters, namely, a pulling-down action. Mr. LYON.—Objected to as leading. A. Yes, sir. Q. 356. By Mr. BLAKESLEE.—Please compare the operation of the reamer disclosed in 'Complainants' Double Patent' with the operation of the reamer disclosed in 'Defendant's Exhibit O'Donnell and Willard Patent,' eliminating from consideration the features of 'Defendant's Exhibit O'Donnell and Willard Patent' which are lacking in 'Defendant's

(Deposition of W. W. Wilson.)

Exhibit O'Donnell and Willard Reamer,' upon encountering sticky formation or other unusual formations, such as you have referred to? A. In each reamer there is a body with means for attachment to the tools at the upper end, each having a central bore for the placement of spring and mandrel rod, such spring on the upper end bearing against the end threaded on [294] the upper end of the mandrel rod, and on its lower end in the Double underreamer disclosed against a shoulder in the underreamer body, and in the O'Donnell and Willard underreamer against a shoulder on the upper end of the threaded plug on the top of the central partition. The mandrel rod in the Double underreamer at its lower end has a slot for the reception of a key, which key extends downward through a slot in the body into contact with the upper edges of the slots in the shanks of the cutters. In the O'Donnell and Willard Patent the lower end of the mandrel rod is integral, forming a T-rod, with lugs extending outward in contact with the upper edges of the slots in the cutters. The cutters in both cases are separated completely to an expanded position by a partition between them, which partition has a hole for the passage of the mandrel rod and slot for the movement and directing of the key on the Double underreamer, and the lugs on the lower end of the T-rod in the O'Donnell and Willard underreamer. This partition remains partly between the cutters when in contracted position in both the Double underreamer and in the O'Donnell and Willard under-

(Deposition of W. W. Wilson.)

reamer. The contraction of the cutters is caused in both cases by the movement downward over the end partition, allowing the removal of the partition to allow the cutters to collapse together at their lower ends, and also by the movement outward of the shanks of the cutters in the O'Donnell and Willard underreamer bearing against the downwardly outwardly tapering faces of the pockets in which the cutters move, and in the Double underreamer caused by the upper ends of the dovetail of the cutters riding outwardly on the outwardly downwardly tapering of the dovetail shoulders on the body. The tilting of the cutters in both cases being complex, the movement of the slots in the shanks of the cutters being partly tilting and partly sliding in their movement to contracted or expanded position in both reamers. The outwardly downwardly tapering faces on the cutter pockets in the O'Donnell [295] and Willard underreamer, and also the outwardly downwardly tapering dovetail shoulders in the Double underreamer, are placed as they are to allow the spreading of the upper ends of the cutter shanks, which causes collapsing of the cutting points because of riding over a sliding fulcrum near the center of the cutter lengths. The operation of the reamers in running in a hole, expanding and withdrawing, is the same in both reamers. Q. 357. You have not yet replied to my question with respect to the comparison of the operation of these reamers with the features referred to eliminated from the O'Donnell and Willard reamer in encountering sticky and other

(Deposition of W. W. Wilson.)

unusual formations. Please do so. A. The action of both underreamers under this condition would be the same, namely, the cutters would tend to stick in the hole and when the body is moved upward the spring would be compressed until sufficient movement of the cutters has taken place to reduce the suction or tension exerted on the cutters sufficient to break the suction, which would allow the cutters to snap upward within the body. Q. 358. I now show you 'Defendant's Exhibit Wilson Underreamer Patent' and ask if you are familiar with the disclosure of the same? A. I am. Q. 359. I believe you have not yet summarized the disclosure of this patent. Please now do so. A. The underreamer shown in Wilson Underreamer Patent consists of a body, the usual upper means for the attachment of the tool being shown broken away in the drawing. The body has a hole drilled up from the bottom for the reception of a spring and a T-rod. The spring at its lower end bears against the block 7 held in position by retaining pins 8. The upper end of the spring bears against the threaded nut 19 at the top end of the T-rod 5'. The T-rod 5' extends downward through the spring and through the block 7 into the notch or space between the prongs on the lower end of the body. The lower end of the body or extension or that part below face 10 consists of two widely separated prongs 2, which have on their [296] inner faces ridges 3 and on their lower ends spreading-faces 9 and 17. These prongs extend downward, one on each side of the cutters, which cut-

(Deposition of W. W. Wilson.)

ters have ridges or dovetail shoulders on their sides 4², intended to engage the ridge 3 on the insides of the prongs. The cutters have on their inner faces pockets for the reception of the lugs on the lower end of the T-rod 5. The collapsing of the cutters is caused by their downward movement against the pull of the spring and the T-rod, which downward movement allows the cutters to pass down over and beyond the faces 9 on the prongs, and to slide inward with their upper edges of the faces 4³ bearing against the spreading-faces 17. The operation of the reamer consists in withdrawing the cutters to contracted position, placing the reamer in the casing and running it down beyond the casing, when the pressure on the outside of the cutters being released, the cutters, due to the spring-pressure, are moved upward into working position. The reaming operation is now conducted, and on its completion the reamer is drawn upward until the shoulders 30 on the cutter shank engage the casing shoe which holds the cutter stationary for a time until the body is withdrawn sufficiently to allow the cutters to move down in a collapsed position, when they follow the body up the casing to the surface. Mr. BLAKESLEE.—The defendant offers as an exhibit the certified copy of the records of the United States Patent Office of the file wrapper and contents in the matter of ‘Complainants’ Exhibit Double Patent,’ as ‘Defendant’s Exhibit Certified Copy File Wrapper and Contents Complainants’ Exhibit Double Patent.’” Those questions were asked and those answers given by you

(Deposition of W. W. Wilson.)

at that time, were they? A. Yes, sir.

Mr. LYON.—In connection with the examination of this witness we offer in evidence in this case the O'Donnell and Willard patent referred to, to wit, No. 762,435, dated June 14, [297] 1904, and ask that the same be marked "Defendant's Exhibit O'Donnell and Willard Patent."

Similarly, we offer in evidence the model referred to in this witness' answer to question 347, 348 and 349 just quoted, as "Defendant's Exhibit Partial O'Donnell and Willard Underreamer on Diminutive Scale," the same being on file as part of the records of this court in the said suit, and ask that the same be marked herein "Defendant's Exhibit O'Donnell and Willard Underreamer on Diminutive Scale."

We also offer in evidence in connection with the testimony of this witness the said underreamer on file in said suit No. 1540 and therein marked "Defendant's Exhibit O'Donnell and Willard Underreamer," and ask that the same be marked "Defendant's Exhibit O'Donnell and Willard Underreamer."

And we also offer in evidence a copy of said Double patent 734,833 and ask that the same be marked "Defendant's Exhibit Double Patent No. 1."

Mr. BLAKESLEE.—We object to this last line of quotation as not being recross-examination and not the proper method of proof, and particularly in connection with the making of this *prima facie* case, and we object to the offer of each and every of the exhibits mentioned, as not the proper method of proof

(Deposition of W. W. Wilson.)

and not identified, and irrelevant, immaterial and incompetent.

Mr. LYON.—Recross-examination closed.

Redirect Examination.

(By Mr. BLAKESLEE.)

Q. 209. With respect to the provision of the grooves in the inner spaces of the bodies of the cutters of Complainant's Exhibit "Improved Double Reamer and Cutters," you have testified, I believe, before, that no such grooves occur in the inner faces of Complainant's Exhibit "Old Style Double Reamer Cutter No. 1"? Is that correct? [298]

A. Yes, sir.

Q. 210. Why do you take it that those grooves were not necessary in the old style Double reamer-cutter?

Mr. LYON.—Objected to as assuming facts not testified to by the witness, incompetent, no foundation laid, the witness not having qualified to answer the question, and as leading.

Q. 211. (By Mr. BLAKESLEE.) The question is revised by substituting the word "provided" for the word "necessary."

Mr. LYON.—The same objection.

(The question as amended is read as follows: "Why do you take it that those grooves were not provided in the old style Double reamer-cutter?")

A. The cutters in those reamers did not collapse so close together. Because of the thin pipe, smaller expansion was sufficient; and, furthermore, the use of a divided thrust-bearing was not known.

(Deposition of W. W. Wilson.)

Q. 212. (By Mr. BLAKESLEE.) When did the use of that divided thrust-bearing become known?

A. With the advent of the Wilson underreamer.

Q. 213. You mean like Complainant's Exhibit "Wilson Patent"? A. Yes, sir.

Q. 214. What caused the improved Double reamer like Complainant's Exhibit "Improved Double Reamer and Cutters," the increased expansion which accounted for the provision of the grooves in the thrust-bearings of the cutters?

A. It was necessary to give the cutters greater expansion, as thicker pipe with heavier collars came into use, because it was necessary to run the underreamer inside the pipe and to have the cutters expand to a diameter considerable in excess of the outside diameters of the collars of the pipe to permit the pipe to pass freely down the hole after underreaming operations. [299]

Q. 215. And what provision of the improved Double underreamer like Complainant's Exhibit "Improved Double Reamer and Cutters," caused this increased contraction?

A. The shank of the cutter was decreased in length from the edge of the inner thrust-bearing to the top of the cutter-shank. The cutter body was increased in length below the inner thrust-bearing. The cutters in collapsed position were permitted to come much closer together. The hollow-slotted extension was thickened somewhat.

Q. 216. Please compare the location of the fulcrum zone or line in the cutter, "Exhibit Improved

(Deposition of W. W. Wilson.)

Double Reamer and Cutters' cutter, with the fulcrum line of Complainant's Exhibit "Old Style Double Reamer Cutter No. 1," as to position.

Mr. LYON.—Objected to as not redirect examination, and as mere repetition, the witness having been over this ground several times in answer to questions by counsel for complainant; and upon the further ground that it is irrelevant and immaterial to the issues of this case.

A. The fulcrum line is raised on the cutter of the improved Double reamer and cutters cutter over what it was on the old style "Double Reamer Cutter No. 1."

Q. 217. (By Mr. BLAKESLEE.) And what connection, if any, was there between that and the increased collapsion of the cutters in the improved Double reamer?

A. This increased the collapsion because it increased the extent of the tilting.

Mr. BLAKESLEE.—That is all.

Recross-examination.

(By Mr. LYON.)

Q. 218. You have asserted in your last answers that the Wilson underreamer provided an increased expansion over that of the so-called old style Double underreamer. Do you understand such to be the case?

[300] A. I believe such is the case; yes, sir.

Q. 219. In the cutters or bits of the Wilson underreamer, either as shown in Complainant's Exhibit "Wilson Patent," or any of the Wilson underreamers manufactured by Wilson and Willard Manufac-

(Deposition of W. W. Wilson.)

turing Company, with which you state you are familiar, was there any groove or slot cut in the metal between the expansion-surfaces 4³ of the cutters thereof?

A. In the first Wilson underreamer made, according to the blue-prints, there is a cut downwardly between the bearing-surfaces 4³ at their lower portions.

Q. 220. I will ask you to produce said blue-print.

A. I was referring to the photograph thereof in Complainant's Exhibit "File Wrapper and Contents."

Q. 221. Have you any personal knowledge of the original of this drawing or the original underreamer or any original underreamer corresponding to such drawing?

Mr. BLAKESLEE.—Objected to as not recross-examination.

A. No, sir.

Q. 222. (By Mr. LYON.) Now, will you please answer the preceding question No. 219?

A. No, sir.

Q. 223. The inner thrust-bearing surface of the so-called Double improved underreamer-cutter, lies projected considerably inward of the body portion and shank, due to the use of the wall of the V-shaped slot of the shank along the wedge-like expansion of the bit? Is that correct?

A. It lies on the plane of the back of the cutter.

Q. 224. And projected, in the case of the bits of Complainant's Exhibit "Improved Double Reamer

(Deposition of W. W. Wilson.)

and Cutters," a good half-inch outward from the inner end or line of the lower wall of this V-shaped groove?

A. The V-shaped groove was cut into the back of the [301] cutter about, roughly, a half-inch.

Q. 225. And in the cutter of Complainant's Exhibit "Wilson Patent" and Complainant's Exhibit "Wilson Underreamer," the spreading-bearing faces 4³ are cut back below the plane of the inner face of the shank? Is that correct? A. Yes, sir.

Q. 226. To what extent would you say, comparatively?

Mr. BLAKESLEE.—Objected to as not the best evidence. The exhibit speaks for itself.

A. It is a varying degree.

Q. 227. (By Mr. LYON.) In the Wilson underreamer the projecting metal between these two spreading-bearing surfaces 4³, projects when the cutters are in the body of the reamer, between the two open prongs, does it? A. Yes, sir.

Q. 228. And in collapsion these parts may collapse together, there being no metal between them?

A. Yes, sir.

Mr. LYON.—That is all.

Redirect Examination.

(By Mr. BLAKESLEE.)

Q. 229. Please compare the groove in the back of the spreading-bearing of the cutters of Complainant's Exhibit "Improved Double Reamer and Cutters" with the terminal portion of the shank between the spreading-bearings of the cutters of Complain-

(Deposition of W. W. Wilson.)

ant's Exhibit "Wilson Reamer," with respect to their relation to the lateral bearing faces and the relative arrangement of said faces. That is, compare in these respects the groove and the terminal portion of the shank.

A. Both of these tend to divide the bearing-surfaces into two laterally displaced faces. [302]

Mr. BLAKESLEE.—That is all.

Mr. LYON.—That is all.

Mr. BLAKESLEE.—The witness is excused, subject to such recall as may be desirable.

(By consent of counsel the further taking of proofs on behalf of complainant is now postponed until tomorrow, Friday, April 24, 1914, at the hour of 10 o'clock A. M., at the office of solicitor for complainant.)

Friday, April 24, 1914, 10 o'clock A. M.

This being the time and place to which the further taking of proofs in this case was continued, a further continuance is now taken until the hour of 11 o'clock of this day at this same place.

Friday, April 24, 1914, 11 o'clock A. M.

This being the time and place to which the further taking of proofs on behalf of complainant was continued, a further postponement is now taken until 3 o'clock P. M. of this day.

Friday, April 24, 1914, 3 o'clock P. M.

This being the time and place to which the further taking of proofs on behalf of complainant was continued, a further postponement is now taken until Saturday, April 25, 1914, at 10 o'clock A. M.

Saturday, April 25, 1914, 10 o'clock A. M.

This being the time and place to which the further taking of proofs on behalf of complainant was continued, a further postponement is now taken until Tuesday, May 12, 1914, at 10 o'clock A. M. [303]

[Endorsed]: R. No. A-4—Equity. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Proofs Taken on Behalf of Complainant. Filed Dec. 12, 1914. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. [304]

United States District Court, Southern District of California, Southern Division.

IN EQUITY—No. A-4.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

This being the time and place specified in a notice for taking further proofs in the above-entitled cause, proceedings are now resumed.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

Mr. BLAKESLEE.—Further proofs taken on behalf of complainant in re Elihu C. Wilson, complain-

ant, vs. Union Tool Company, defendant, in equity, No. A-4, pursuant to notice, at the office of Raymond Ives Blakeslee, counsel for complainant, room 728-729-730 California Building, Los Angeles, California, commencing at the hour of 10 o'clock A. M., December 11, 1914, before Francis L. Isgrigg, Notary Public, and I. Benjamin, Notary Public, such proceedings likewise being continued under the stipulation of record providing for the taking of proofs. Present: Raymond Ives Blakeslee, Esq., counsel for complainant; Frederick S. Lyon, Esq., counsel for defendant.

Mr. BLAKESLEE.—Counsel for complainant at this point states that the notary I. Benjamin, before whom the preceding proofs in this action have been taken, may, if counsel for [305] defendant so demands, certify the remaining portion of the uncompleted deposition of the party Wilson herein referred to, and that such deposition portion will likewise be certified by the notary Francis L. Isgrigg, and the record, pursuant to the stipulation as to the taking of proofs, will be taken stenographically by a person other than said notary public I. Benjamin, and under the supervision of said notary public Francis L. Isgrigg, in addition to such supervision as said I. Benjamin may offer. The succeeding or further depositions of witnesses produced on behalf of complainant will be taken and all procedure on behalf of complainant in connection therewith had under the supervision of said notary public Francis L. Isgrigg and by some other person taken stenographically; all such record portions hereafter taken in

this case on behalf of complainant stenographically to be transcribed likewise under the direction and supervision of said notary public Francis L. Isgrigg. Counsel for complainant likewise now produces the witness party Elihu C. Wilson to further testify under cross-examination which was interrupted by the motion of defendant to compel such witness to testify as to the date of construction of the first Wilson reamer with the key confining the spring, as complainant has consented, subsequent to the development of this testimony in another contested matter, to the giving of such testimony by said witness. The party Wilson is now ready for such further cross-examination, and we give notice that as to the further witnesses on behalf of complainant we are now prepared to state that one of the same will be Charles E. Wilcox of East Bakersfield and Los Angeles, California, and James C. Hubbard, of Los Angeles, California. We wish further to definitely state that complainant will not be responsible for the pay of any other person than that person delegated by the notary public Francis L. Isgrigg to take the further record in cross-examination or redirect et cetera, of the party Wilson, and [306] particularly will not be responsible for the pay of the notary public I. Benjamin for taking any such testimony or any further part of the record in this case.

Mr. LYON.—Do I understand counsel for complainant to state that the complainant declines to produce before I. Benjamin as notary public the witness E. C. Wilson for his further cross-examination

in this case subject to and in accordance with the rule and order of this court, and that the complainant refuses to pay the said I. Benjamin for taking, certifying or returning any portion of said deposition?

Mr. BLAKESLEE.—If counsel for defendant wishes to know the position of complainant further in these matters, we will elucidate. We have produced and again produce the witness party Wilson for further cross-examination, and we have notified the notary public of this procedure and he is here, and we agree to his certification of the further deposition or continued deposition of the witness party Wilson, and we do not intend to interfere with his so certifying to the rest of such deposition. The stipulation as to taking proofs in this case does not provide that the notary shall delegate the reporter who shall take any of the proofs in this case, but relies upon the statute which prescribes that such depositions are to be taken under the supervision of the notary public, and the notary public I. Benjamin may supervise all he wishes to as to the further deposition of the party Wilson short of delegating the person who writes and transcribes the deposition, which does not come within the spirit of the stipulation mentioned, and we decline to meet and defray the expense or any expense or charge of the notary public I. Benjamin with respect to any further reporting of any deposition in this case. We again repeat that the notary public may certify as fully as he wishes the further procedure on the

deposition of the party [307] E. C. Wilson in this case, and in that connection we call attention to the fact that it has been the custom of such notary I. Benjamin to certify depositions taken before counsel present in this or other matters which were reported directly by a person other than himself. We do not in any sense desire to prevent any proper certification of this deposition. Furthermore, this procedure in further cross-examination of the party Wilson is in response to a consent on behalf of complainant that the testimony sought for having been properly adduced previously in another proceeding; such testimony might now be adduced in this proceeding; and counsel for defendant does not produce here any showing of any order which appears to be in conflict with the complainant's position.

Mr. LYON.—The records of the minutes of this court speak for themselves as to such order. Counsel for complainant and counsel for defendant were present when such order was made, and the notary I. Benjamin was present with the record in this case at the time of the hearing of such motion, and when the order for the further production of the witness E. C. Wilson and that he answer the questions referred to the court was made. Defendant declines absolutely to proceed with the record of the cross-examination of this witness E. C. Wilson in this case taken or certified by any other person or under the direction of any other person than the notary I. Benjamin, under whose supervision and before whom this deposition has heretofore been partially taken,

and before whom it was being taken, and if the position of complainant and complainant's counsel as indicated on the record, is, that complainant will not pay the expense incident to the attendance, stenographically taking, and transcription of the further cross-examination of this witness E. C. Wilson in this case, by the notary I. Benjamin or under his direction, we decline to further proceed, and ask the immediate and forthwith certification of the record to the court and give notice of motion that [308] the court order the witness E. C. Wilson produced before I. Benjamin, notary public, to complete the said deposition; and that upon failure of complainant so to produce the said witness, the entire deposition of E. C. Wilson heretofore taken in this case be stricken from the files in this case and suppressed. I know nothing of the notary Francis L. Isgrigg in this proceeding or otherwise. I am not acquainted with him. I have no knowledge of or acquaintance with the person whom he under the direction of counsel for complainant desires to or will direct to take or transcribe the alleged cross-examination, and unless such person is known to and vouched for by the notary I. Benjamin, I shall and do decline to permit such person to in any manner officiate herein. This demand for the certification of the record is final. It is not the duty of the defendant to assume any of the cost of taking or certifying or returning of this deposition, and it is apparent that the deposition cannot proceed under the stipulation herein as counsel for complainant and complainant maintain the posi-

tion they have taken. I do not accede to the interpretation placed upon the stipulation by counsel for complainant, and give notice that at the same time that said motion is heard I shall move the court to appoint someone as special examiner to take the testimony and depositions in this case to avoid the possibility of this situation arising again in the future; and I further give notice that if the court does not deem it expedient to appoint such special examiner, I shall at the same time move, and do now move, that the stipulation heretofore entered into be set aside and the case heard in open court. The notary I. Benjamin now present will certify this morning's proceedings forthwith to the court, and such motion will be placed upon the motion calendar of this court for Monday, December 14, 1914, at 10:30 A. M., or as soon thereafter as counsel can be heard, and I give notice that I shall ask the court for an order restraining any [309] further proceedings in this case until this motion can be heard.

Mr. BLAKESLEE.—The parties to this case are bound by the stipulation, and under that stipulation certain procedure is provided for. We do not care whether counsel for defendant knows the notary Francis L. Isgrigg or not. He was notified that we would proceed at this time before such notary, and we do not believe there is any ground for differentiating between him and the notary I. Benjamin with respect to any notarial qualifications. Counsel for complainant is under instructions from complainant not to employ the notary public I. Benjamin any

further as stenographer or reporter in this matter, or any other matter, for reasons which are immaterial to this record, and counsel for complainant is simply following complainant's instructions and permitting certification of the further deposition of the party Wilson by the notary public I. Benjamin. In view of the motion of counsel for the defendant, we assume that he declines to now further cross-examine the witness party Wilson. We call his attention to the fact that his motion as shown on this record in this respect to compel the witness to testify was for an order requiring the witness to answer a certain question. The witness is here now to answer that question, and that is as far as the motion went. In view of the refusal of counsel for the defendant to proceed with the cross-examination of the party Wilson, we will call another witness, namely, Charles E. Wilcox, and proceed with his deposition before the notary public Francis L. Isgrigg and under his supervision.

Mr. LYON.—I stand on my right to complete the cross-examination of the witness E. C. Wilson and to have such cross-examination made a part of the deposition and taken and certified to and returned by the notary I. Benjamin. I do not waive that right. I object to any further proceedings in the case until that cross-examination is completed. I now ask the notary I. Benjamin [310] if he knows anything of the purported shorthand reporter presented in the room by counsel for complainant or by the notary Isgrigg, and whether he will certify

and vouch for any transcript made by such party. I know nothing of such stenographer.

The Notary BENJAMIN.—I do not believe that I have ever seen either of these parties before, and I will not vouch for the work of anyone excepting my own or of someone delegated by me to do the work in my place, or of someone selected by stipulation of counsel for both parties. If counsel for both parties agree upon any reporter and will stipulate as to the form of the certificate and work of such reporter, I will very gladly make certification accordingly.

Mr. BLAKESLEE.—Under the statutes contemplated for taking proofs in this case, there is no requirement that the notary be the stenographer or reporter, and there is no requirement that the same stenographer be used continuously in the taking of any deposition. In fact the statute contemplates taking depositions before magistrates or other persons who are not assumed to be competent to even take the depositions physically in any manner whatsoever. We produce here a competent deposition reporter of long experience, furnished by the notary public Francis L. Isgrigg, and offer this reporter for the purpose of taking the remaining portion of this deposition which is to be paid for by us if taken by her. We believe we have the proper right to elect as to who shall do the physical reporting of the deposition and procedure in connection therewith. As to the further procedure in the case prior to the completion of the deposition of the party Wilson,

there is no order extant forbidding such procedure, and, in fact, further procedure was had in this case after the motion was made to compel the party Wilson to further testify. That said further procedure was had in connection with another [311] witness. We will now proceed to examine the witness Charles E. Wilcox under the supervision of the notary Francis L. Isgrigg, and with the service of the other stenographer Helen Van Upp, hereinbefore referred to at this session.

Mr. LYON.—The notary I. Benjamin will certify the proceedings of this morning to the Court in accordance with the demand of counsel for defendant, and request the clerk of the Court to place said motion upon the motion calendar for the time indicated, and notice is given that application will be made to-day for a restraining order to prevent further proceedings in this case until such motion is heard and determined.

Mr. BLAKESLEE.—Such a restraining order has been refused by this Court under similar circumstances, on application therefor having been made by counsel for defendant here present, and with such refusal as a precedent, we proceed with another witness as above stated.

Mr. LYON.—The statement of counsel is inaccurate. In the case referred to permission was given to take the direct examination of other witnesses upon the consent of counsel for defendant, myself, with an agreement that the deposition of such wit-

ness should be suspended whenever a similar question arose with respect to the witness answering a question, as will be found by the procedure and record in equity suit No. A-110 pending in this Court, the original of which record is now in the possession of the present notary I. Benjamin. Clearly complainant cannot compel the defendant to assume or pay the cost of attendance or notary's fees, either for attendance in taking, transcribing or returning any portion of this deposition, and we stand upon our right.

Mr. BLAKESLEE.—Counsel's observations apparently do not point to any inaccuracies of the previous statement of counsel for complainant. [312]

United States of America,
State of California,
County of Los Angeles,—ss.

I, I. Benjamin, a notary public in and for the county of Los Angeles, state of California, duly commissioned, sworn and qualified to administer oaths, etc., do hereby certify that the foregoing is a full, true and correct transcript of the proceedings taken on this eleventh day of December, 1914, in the above-entitled cause, in respect to the completion of the cross-examination of the witness party Elihu C. Wilson. That pursuant to the request of counsel for the defendant made on the record, I hereby certify and return the said proceedings of the said day, and hereby certify that the same is a full, true and correct transcript of such proceedings.

IN WITNESS WHEREOF, I have hereunto set

my hand and affixed my official seal on this 11th day of December, 1914.

[Seal]

I. BENJAMIN,

Notary Public in and for Los Angeles County, State of California.

[Documentary Stamp.]

[Endorsed]: In Equity—No. A-4. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. Proceedings on Behalf of Elihu C. Wilson, Before I. Benjamin, Notary Public. December 11th, 1914. Filed Dec. 12, 1914. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. [313]

In the United States District Court, Southern Division of California, Southern Division.

IN EQUITY—No. A-4.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Proceedings Had December 11, 1914.

Further proofs taken on behalf of complainant, *in re* Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant, in Equity—No. A-4, pursuant to notice, at the office of Raymond Ives Blakeslee, counsel for complainant, at rooms 728-729-730 Cali-

ifornia Building, Los Angeles, California, commencing at the hour of ten o'clock A. M., December 11th, 1914, before Francis L. Isgrigg, Notary Public, and I. Benjamin, Notary Public, such procedure likewise being continued under stipulation and record as provided for the taking of proofs.

Present: RAYMOND IVES BLAKESLEE, Esquire, Counsel for Complainant and
FREDERICK S. LYON, Esquire, Counsel for Defendant.

Mr. BLAKESLEE.—Counsel for complainant at this point states that the notary, I. Benjamin, before whom the proceedings and proofs in this case have been taken, may, if counsel for defendant so demands, certify to the remaining portion of the uncompleted deposition of the party Wilson herein, but that such deposition portion will likewise be certified by the notary, Francis L. Isgrigg, and the record pursuant to the stipulation as to the taking of proofs will be taken stenographically by a person other than such notary public, I. Benjamin, and under the supervision [314] of said notary public, Francis L. Isgrigg, in addition to such supervision as said notary public, I. Benjamin may offer.

The succeeding, or further depositions of any witnesses produced on behalf of the complainant will be taken, and all procedure on behalf of the complainant in connection therewith had, under the supervision of said notary public, Francis L. Isgrigg, and by some other person taken stenographically; all such record portions hereafter taken in this case

in behalf of the complainant, stenographically, to be transcribed likewise under the direction and supervision of said notary public, Francis L. Isgrigg.

Counsel for complainant likewise now produces the witness party Elihu C. Wilson to further testify under cross-examination, which was interrupted by a motion of the defendant to compel such witness to testify as to the date of production of the first Wilson Reamer with the key-confining spring, as complainant has consented subsequent to the development of this testimony and in another contested matter to the giving of such testimony by said witness. The party witness Wilson is now ready for such further cross-examination, and we give notice that as to further witnesses on behalf of the complainant, we are now prepared to state that one of the same will be Charles E. Wilcox of Los Angeles and East Bakersfield, California, and another, James C. Hubbard of Los Angeles, California; and, we wish further to definitely state that the complainant will not be responsible for the pay of any other person than that person delegated by the notary public, Francis L. Isgrigg, to take the further record in the cross-examination, or redirect, etcetera, of the party witness Wilson, and particularly will not be responsible for the pay of the notary public, I. Benjamin for the taking of any such testimony, or any further part of the record in this case.

Mr. LYON.—Do I understand counsel for complainant to state [315] that the complainant de-

clines to produce before I. Benjamin, as notary public, the witness E. C. Wilson for his further cross-examination in this case, subject to, and in accordance with the rule and order of this Court, and that claimant refuses to pay the said I. Benjamin for taking, certifying, or returning *and* portion of said deposition? .

Mr. BLAKESLEE.—If counsel for defendant wishes to know the position of complainant further in this matter, we will elucidate. We have produced, and again produce, the witness party E. C. Wilson for further cross-examination and we have notified the notary public of this procedure, and he is here and we agree to his certification of the further deposition, or continued deposition of the witness party Wilson, and we do not intend to interfere with his so certifying to this deposition. The stipulation as to the taking of proofs in this case does not provide that the notary public shall delegate the reporter who shall take any of the proofs in this case, but relies upon the statute which prescribes that such depositions are to be taken under the supervision of the notary public, and the notary public, I. Benjamin, may certify all he wishes as to further depositions of the witness party Wilson, short of delegating the person who actually writes down and transcribes the deposition, which does not come within the spirit of the stipulation mentioned, and we decline to meet and defray the expense, or any expense, or charge of the notary public, I. Benjamin, with respect to any further reporting of any

depositions in this case. We again repeat that the notary public may certify as fully as he wishes the further procedure on the deposition of the party, E. C. Wilson, in this case, and in that connection we call attention to the fact that it has been the custom of said notary public, I. Benjamin, to certify depositions taken before counsel present, in this, or other matters, which were reported by a person other than himself. [316] We do not in any way desire to prevent any proper certification of this deposition. Furthermore, this procedure in cross-examination of the witness party Wilson is in response to the consent on behalf of the claimant, that the testimony sought for having been adduced previously in another proceeding, such testimony might now be adduced in this proceeding, and counsel for defendant does not produce here any showing of any order which appears to be in conflict with complainant's position.

Mr. LYON.—The record and the minutes of this Court speak for themselves as to such order. Counsel for complainant and counsel for defendant were present when such order was made and the notary, I. Benjamin, was present with the record in this case at the time of the hearing of such motion, and when the order for the further production of the witness, E. C. Wilson, and that he answer the questions referred to the Court, was made. Defendant declines absolutely to proceed with the record of the cross-examination of this witness, E. C. Wilson, in this case, taken or certified by any other person, or

under the direction of any other person than the notary public, I. Benjamin, before whom and under whose supervision this deposition has been heretofore partially taken, and before whom it was being taken, and if the position of the complainant, and complainant's counsel is as indicated on the record, that claimant will not pay the expense incident to the attendance and stenographic taking and transcription of the further cross-examination of this witness, E. C. Wilson, in this case, by the notary, I. Benjamin, or under his direction, we decline to further proceed and ask the immediate and forthwith certification of the record to the Court, and give notice of motion that we shall ask that the Court order the witness, E. C. Wilson, produced before I. Benjamin, notary public, to complete the said deposition, and that upon the failure of claimant so to produce the said witness, the entire [317] deposition of E. C. Wilson heretofore taken in this case, be stricken from the files in this case and suppressed. I know nothing of the notary, Francis L. Isgrigg, in this proceeding or otherwise; I am not acquainted with him; I do not know whether he is, or is not impartial. I have no knowledge of, or acquaintance with the person who he, under the direction of counsel for complainant, desires to take, or will direct to take, or transcribe, the cross-examination, and unless such person is known to, and is vouched for by the notary public, I. Benjamin, I shall and do, decline to permit such person to in any manner officiate herein. This demand for the certification

of the record is final. It is not the duty of the defendant to assume any of the costs of taking, or certifying, or returning of this deposition, and it is apparent that the deposition cannot proceed under the stipulation herein, if counsel for claimant, and complainant, maintains the position that they have taken. I do not accede to the interpretation placed upon the stipulation by counsel for complainant, and give notice that at the same time said notice is heard, I shall move the Court to appoint some one as special examiner, to take the testimony and depositions in this case, to avoid the possibility of this situation arising again in the future. And further give notice that if the Court does not deem it expedient to appoint such special examiner, I shall at the same time move, and do now move, that the stipulation heretofore entered into, be set aside and the case heard in open court. The notary, I. Benjamin, now present, will certify this morning's proceedings forthwith to the Court, and such motion will be placed upon the motion calendar of this Court for Monday, December 14th, 1914, at the hour of ten-thirty A. M., or as soon thereafter as counsel can be heard, and I give notice that I shall ask the Court for an order restraining any further proceedings in this case until such motion can be heard.

[318]

Mr. BLAKESLEE.—The parties to this case are bound by the stipulation and under that stipulation certain procedure is provided for. We do not care whether counsel for the defendant knows the notary,

Francis L. Isgrigg, or not. He was notified that we would proceed at this time before such notary, and we do not believe there is any ground for differentiating between him and the notary, I. Benjamin with respect to any notarial qualifications. Counsel for complainant is under instructions from complainant not to employ the notary public, I. Benjamin any further as stenographer or reporter in this matter, or any other matter, for reasons which are immaterial to this record. Counsel for complainant is simply following complainant's instructions not to permit the certification of the further deposition of the party Wilson by the notary public, I. Benjamin. In view of the motion of counsel for the defendant, we assume that he declines to *any* further cross-examine the witness party Wilson and we call his attention to the fact that his motion as shown in the record in this respect to compel the witness Wilson to testify, was for an order requiring the witness to answer a certain question; the witness is here now to answer that question, and that is as far as the motion went. In view of the refusal of counsel for defendant to proceed with the cross-examination of the witness party Wilson, we will call another witness, namely, Charles E. Wilcox, and proceed with his deposition before the notary, Francis L. Isgrigg, and under his supervision.

Mr. LYON.—I stand on my right to complete the cross-examination of the witness E. C. Wilson, and to have such cross-examination made a part of the deposition, and taken and certified to and returned by the notary, I. Benjamin. I do not waive that

right. I object to any further proceedings in the case until that cross-examination [319] is completed. I now ask the notary public if he knows anything of the shorthand reporter presented in this room by counsel, or of the notary, Isgrigg, and whether he would be willing to certify to and vouch for any transcript made by such party. I know nothing of such stenographer.

The Notary, I. BENJAMIN.—I do not believe that I have even seen either of these persons before, and I will not vouch for anybody's work unless one whom I know and one who is delegated by me to perform work in my place; or some one selected by stipulation of counsel for both parties. If counsel for both parties agree upon any reporter and will stipulate as to the form and the certificate of the work of such reporter, I will very gladly make certification accordingly.

Mr. BLAKESLEE.—Under the statutes contemplated for the taking of proofs in this case, there is no requirement that the notary be the stenographer or reporter, and there is no requirement that the same stenographer be used continuously in the taking of any deposition; in fact, the statute contemplates the taking of such deposition before magistrates, or other persons who are not presumed to be competent to even take the deposition physically, or in any other manner whatsoever. We produce here a competent deposition reporter of long experience, furnished by the notary public, Francis L. Isgrigg, and offer this reporter for the purpose of taking the remaining por-

tion of this deposition, which is to be paid for by us if taken by her. We believe we have the proper right to select the person who shall do the physical reporting of the deposition and procedure in connection therewith. As to further procedure in this case, prior to the completion of the deposition of the party Wilson, there is no order extant forbidding such procedure, in fact further procedure was had in this case [320] after the motion was made to compel the party Wilson to further testify. That said further procedure was had in connection with another witness. We will now proceed to examine the witness, Charles E. Wilcox, under the supervision of the notary, Francis L. Isgrigg, and with the service of the other stenographer, Helen Van Upp, hereinbefore referred to at this session.

Mr. LYON.—The notary, I. Benjamin, will certify the proceedings of this morning's work to the Court in accordance with the demand of counsel for the defendant, and request the clerk of the court to place said motion upon the motion calendar for the time indicated. Notice is given that application will be made to-day for the restraining order to prevent further proceedings in this case, until such motion is heard and determined.

Mr. BLAKESLEE.—Such a restraining order has been refused by this court under similar circumstances, an application therefore having been made by counsel for defendant here present, and with such refusal as a precedent, we will proceed with another witness as above mentioned.

(Deposition of Charles E. Wilcox.)

Mr. LYON.—Statement of counsel for complainant is inaccurate in the case referred to. Permission was given to take the direct examination of other witnesses upon consent of counsel for defendant, myself, with an agreement that the deposition of such witnesses should be suspended whenever a similar question arose with respect to the witness answering the question, as will be found by the procedure and record in equity suit A-110 pending in this court, the original of which record is now in the possession of the notary I. Benjamin. Clearly, complainant cannot compel the defendant to assume or pay the costs of attendance, or notary's fees, either for attendance, taking, transcribing, or returning [321] any portion of this deposition, and we stand upon our rights.

Mr. BLAKESLEE.—Counsel's observations apparently do not point to any inaccuracy in the previous statement of counsel for complainant.

Whereupon the following proceedings were had :

Deposition of Charles E. Wilcox, for Complainant.

CHARLES E. WILCOX, called as a witness on behalf of the complainant, sworn by the notary public, Francis L. Isgrigg.

CHARLES E. WILCOX, witness produced on behalf of the complainant, being duly sworn according to law, deposes as follows and answers the questions put by Mr. Blakeslee, being sworn by the notary, Francis L. Isgrigg, and the record being taken stenographically and to be transcribed by the re-

(Deposition of Charles E. Wilcox.)

porter Helen Van Upp, under the supervision of said notary public, Francis L. Isgrigg.

Mr. LYON.—The swearing of the witness Elihu C. Wilson in the manner stated by counsel for complainant is objected to and the swearing of the witness Charles E. Wilcox and the taking of his deposition in this case is objected to at this time. Notice has been given of an application for an order restraining any further proceedings in this case until the hearing of the motion to compel the witness E. C. Wilson to appear before I. Benjamin, Notary Public, and complete his deposition in this case and answer questions on cross-examination in accordance with the order of this Court. Defendant protests against any attempt to circumvent such motion or application for a restraining order, and objects both to the notary, Francis L. Isgrigg and to the purported stenographer, as incompetent in this case and any appearance further on behalf of the defendant in this case, during the alleged taking, or purported taking, of the deposition of Charles E. Wilcox will not be considered a waiver of such objection, but will be subject to the ruling of the Court thereon, and a motion now made to strike any [322] such purported deposition from the record; and any proceeding hereafter taken will be subject to such motion. The complainant, and his counsel, both present here in the room, are notified that as soon as the notary, I. Benjamin, can transcribe the report of the proceedings of this morning, the same will be presented, with the record of the deposition of E. C. Wilson, so far as now

completed, to one of the Judges of this court; such application being made for such restraining order forthwith, and demand is now made that this proceeding be suspended at least, until two (2) o'clock, pending the hearing of such application.

Mr. BLAKESLEE.—We shall, of course, expect better notice of the specific hour at which the motion to suspend this proceeding is presented by counsel for defendant. If it is to be purely an *ex parte* procedure, it is, of course, not incumbent upon us in any respect to pay any attention to any such motion, until such order may be made in the premises. We, of course, will respect any order that is made in the premises, on either of the motions this morning, but with the belief that we are clearly within our rights as to proceeding with any other witnesses at this time, and in order not to waste an hour or two, we will proceed with the witness being sworn.

Witness is sworn by the notary public, Francis L. Isgrigg.

Mr. LYON.—I will ask if the record, or purported record as here attempted to be made in this proceeding, has been fully dictated to the alleged stenographer, the notary being present in the room. My purpose in so asking is that, if a new record has been made, I caution the notary public that nothing new shall be added to that record, or taken therefrom. In this connection, call the attention of the notary, as well as the attention of the complainant and complainant's counsel, to the fact that any proceeding [323] taken in connection

with the cross-examination of E. C. Wilson, cannot be certified to by, or returned by this notary. He has no authority to act therein, and any record of any further deposition in this case shall be as an original deposition, under notice. Objection is now made further that no notice has been taken of the testimony of this witness in accordance with the provisions of the Revised Statutes of the United States, and this objection will also be understood as insisted upon, and not as waived, by any further attendance by counsel for defendant; such attendance being under protest, and solely to protect any rights of the defendant, pending the writing up and presentation to the Court, of the defendant's motion for a restraining order herein.

Mr. BLAKESLEE.—The notary public may state on the record, whether or not he has been present during the taking of the record in this matter, this morning, at the present hour and minute.

Mr. ISGRIGG.—I will state at this time that I have been present beginning and during the taking of the dictation of this hearing this morning.

Mr. BLAKESLEE.—And all of the same?

Mr. ISGRIGG.—Yes, sir.

Mr. BLAKESLEE.—We do not desire to take counsel for defendant by surprise with respect to the witness just produced. He knows him well, and in fact we believe he has approached him a number of times within the last few months and attempted to get his assistance with respect to matters which are pending between the complainant and the defendant and other parties associated therewith. [324] We gave

(Deposition of Charles E. Wilcox.)

notice duly of the production of the party Wilson for further cross-examination this morning and he is still here; and we also gave notice of the present witness Wilcox at the beginning of the proceedings this morning, in order that we might not waste a day because of counsel for defendant's attitude with regard to further cross-examination of the witness party wilson. The person Wilson is well known, as we have said to counsel for defendant, and if he desires, he may defray his cross-examination for a few days.

Mr. LYON.—Without waiving any objections hereafter to the record, or in any other manner waiving any objection to any proceeding herein, notice is given that complainant's counsel will demand, and does demand, that the deposition of this witness be reduced to typewriting and a copy thereof delivered to defendant's counsel, before defendant's counsel is required to cross-examine the witness.

Direct Examination of CHARLES E. WILCOX.
(By Mr. BLAKESLEE.)

Q. 1. Will you please state your full name; your residence, your age, and your occupation?

A. Charles E. Wilcox; 752 South Main Street, Los Angeles, California; age, forty-seven; salesman for Wilson & Willard Manufacturing Company.

Q. 2. What business is the Wilson & Willard Manufacturing Company?

A. Manufacturing of oil well tools.

Q. 3. Where located?

A. Fifteenth and Santa Fe Avenue, Los Angeles.

Q. 4. How long have you been connected with that

(Deposition of Charles E. Wilcox.)

concern? A. Since November—December, 1910.

Q. 5. What sort of things have you sold for that concern? [325] A. Elevators—underreamers.

Q. 6. What are underreamers used for?

A. For enlarging holes in oil drilling.

Q. 7. What, if any, name is given to such underreamers in the trade?

A. I believe it is called the Wilson Underreamer.

By Mr. LYON.—I move to strike the answer from the record on the ground that it is incompetent, not the best evidence and merely a conclusion, a guess and an expression of opinion of the witness.

Q. 8. By what name do you call such underreamers when you are selling them?

A. Wilson Reamers.

Q. 9. Did you ever hear anybody else call them the Wilson Reamer?

Mr. LYON.—Objected to as leading.

A. Yes, sir.

Q. 10. And whom, for instance?

A. Well, in fact everybody that speaks of them, that particular type of Reamer, calls it the Wilson Reamer.

Q. 11. Do you find a specimen, or see a specimen of any such reamer in the room here? A. Yes, sir.

Q. 12. Point it out, please.

(Witness points to complainant's "Wilson Underreamer exhibit.")

Mr. LYON.—It is to be noted on the record that upon the devise pointed out by the witness there is no mark of identification of any kind, excepting in

(Deposition of Charles E. Wilcox.)

the handwriting of the counsel for complainant. No marking of such, as an exhibit in this case, appears [326] thereon, and the statement of counsel just made on the record is objected to, as not the best evidence and incompetent.

Mr. BLAKESLEE.—We admit that the present tag is in the handwriting of the counsel for complainant. It is a temporary tag and if there is not a proper tag on that exhibit, it must be due to the dereliction of the notary public, I. Benjamin, who is supposed to mark the same. There is no denial, as we understand it, that this is the exhibit in question, and it will again be properly tagged before the conclusion of this proceeding.

Mr. LYON.—There is nothing apparently to show that this is the exhibit referred to, and it is not possible for counsel for defendant to identify it. It should be properly identified if the record is to show that the witness pointed to anything which has been offered in the evidence, as, or under the title of the exhibit referred to by complainant's counsel. The exhibits heretofore offered in the evidence in this case, have been retained at all times in the custody of the counsel for complainant, and if the said exhibits, or the identification marked thereon have been mutilated, it is not the fault of the defendant, or the fault of the notary, it is entirely a matter which has been, and is, in the control of counsel for complainant. I suggest, in order to avoid this question, that if the tags on these exhibits have been removed, or destroyed, that new identification marks be placed

thereon by the notary who marked them, and that they be properly re-identified before proceeding further, although objection is made to any proceeding at this time, as heretofore stated.

Mr. BLAKESLEE.—If counsel for defendant will thoroughly inspect these exhibits, he will find there is a portion of the original tag on this exhibit still adhering thereto. There are a number of [327] exhibits on the floor in this case which have been here some six or eight months, which weigh approximately a half ton and which cannot be put in any safe or desk, or other over night depository. Counsel for complainant has probably walked over these exhibits fifteen or twenty times, probably fifty, during that time, and it has been impossible to keep the tags in proper shape.

We have also placed a temporary tag upon another exhibit in the case, on the floor here, and will see to it that these exhibits are reidentified before the conclusion of these proceedings by the notary whose duty it is to certify to these marks, such notary having originally identified these exhibits.

Mr. LYON.—Under the Stipulation, these exhibits have been retained in the custody of the counsel for complainant, and I understand all the exhibits in this case, so far introduced, have been retained by him in his office, and there has not been any dereliction of duty on the party of the notary, I. Benjamin. He originally marked and identified these exhibits in the presence of counsel for both parties. If the device referred to is one of these exhibits, or is to be referred

(Deposition of Charles E. Wilcox.)

to as one of these former exhibits, it should now be remarked by an identification tag, placed thereon by the notary, I. Benjamin, to take the place of the one which has been removed in the office of counsel for complainant. Defendants certainly have the right to insist that if these pieces of iron are to be referred to as exhibits in this case and as heretofore offered in evidence in this case, they should at least be identified by the notary who made such identification, and before whom they were offered in evidence.

Mr. BLAKESLEE.—We understand that counsel for defendant demands immediate reidentification or refreshment of the identification by the notary, I. Benjamin, who originally identified them by tags, and we will therefore immediately request his appearance for that purpose and suspend proceedings for that purpose. [328]

We understand now that counsel for defendant both demands that the notary, I. Benjamin, proceed with his certification and likewise, retag these exhibits. Over the telephone, the said notary has stated that he is giving preference to the certification and upon its completion will at once repair to this place, where he will retag such exhibits as necessary.

During the possible infinitesimal interim, we will continue this examination, and counsel for complainant will take the stand, to more fully identify the exhibits in question, as to which tags have become damaged or lost, if such demand is made by the notary or counsel for defendant.

(By Mr. BLAKESLEE.)

Q. 13. How long have you been selling Wilson

(Deposition of Charles E. Wilcox.)

Reamers? A. About four years.

Q. 14. Can you state, approximately, how many you have sold? A. No, I could not.

Q. 15. Can you state, approximately, how many you have sold the last year? A. Maybe fifty.

Q. 16. Can you state the names of any persons or concerns to whom you have sold any such Wilson Reamers during the last year? A. Yes, sir.

Q. 17. Please do so and state where such concerns are located, giving place and state.

A. Standard Oil Company of Fullerton Fields, California; Coalinga Land Company, Coalinga, California; Columbia Oil Company, Fullerton, California; Cornerstone Oil Company, Fullerton Fields, California; Dorsby Oil Company, Fullerton Fields, California; Burch Oil Company, Vera Canyon, California; [329] Vera Canyon Oil Company, Vera Canyon, California; Union Oil Company, Fullerton Fields, California; California County Oil Company, Ventura County, Calif.; Traders Oil Company, Ventura County, Calif.; Standard Oil Company, Newhall Fields, California; Central Oil Company, Whittier, California; Standard Oil Company, Whittier, California; Murphy Oil Company, Whittier Field, California; Sunset Security Company, Kern County, California; El Camina Oil Company, Kern County, California; Midway Oil Company, Kern County, California; Midway Pacific Oil Company, Kern County, California; Newcenter Oil Company, Kern County, California; Adeline Oil Company, Kern County, California; Knickerbocker Oil Company, Kern County, California; Baltimore Oil Company,

(Deposition of Charles E. Wilcox.)

Kern County, California; Section 25 Oil Company, Kern County, California; Boston Pacific Oil Company, Kern County, California; Union Oil Company, Kern County, California.

(Mr. BLAKESLEE.)

Q. 18. Have you sold each and every one of these concerns during the last twelve months?

Mr. LYON.—Objected to as leading.

A. Well, I have not sold them direct. I believe that there has been that many Wilson Reamers sold within that time. This business goes through the supply-houses and I do not get the order direct.

Q. 19. Are you able to say whether or not you have called upon all of these several concerns during the last twelve months?

Mr. LYON.—Same objection. [330]

A. Practically all, yes, sir.

Q. 20. Did you see any reamers in use by any of these concerns at the time of such calls?

A. Yes, sir.

Q. 21. What reamers were they using?

A. They were using Wilson reamers.

Q. 22. Do you know whether any of these concerns had previously used any other reamer than the Wilson reamer? A. Yes, sir.

Q. 23. And what reamer?

A. The reamer known and spoken of as the Double reamer.

Q. 24. By whom is that reamer made?

A. The Union Tool Company of Los Angeles.

Q. 25. The defendant in this case?

(Deposition of Charles E. Wilcox.)

A. I believe so, yes, sir.

Q. 26. You have mentioned the Union Oil Company in a previous answer; do you know whether there is, or has been, any relation between that company and the Union Tool Company just mentioned by you?

Mr. LYON.—Objected to as incompetent, not the best of evidence, hearsay, not in the testimony, and as leading.

Q. 27. Now, the question is, do you know of your own knowledge? A. No, sir, I don't.

Q. 28. Do you know whether the Union Oil Company ever used any Double reamers? A. Yes, sir.

Q. 29. And when?

A. Well, they used them all over the State wherever they were drilling, exclusively, up to a couple of years ago. At least I do not know of their ever using any other kind.

Q. 30. Until what time? [331]

A. A couple of years ago.

Q. 31. And then what did they use?

A. Well, they commenced using the Wilson reamers.

Q. 32. And have you ever observed any such use by that company?

Mr. LYON.—Objected to as leading.

A. Yes, sir, I have seen them using the Double reamers.

Q. 33. Now, my question was relative to the Wilson reamers. A. By the Union Oil Company?

Mr. LYON.—Same objection.

(Deposition of Charles E. Wilcox.)

Q. 34. The Union Oil Company. A. Yes, sir.

Q. 35. When and where?

A. Well, I have seen them used out in the Brea Canyon Field.

Q. 36. Where is that?

A. Orange County, California.

Q. 37. Any place else?

A. Yes, sir, I have seen them used in the Fullerton fields.

Q. 38. Where?

A. Orange County, California.

Q. 39. Do you know why the Union Oil Company used the Wilson underreamer after using the Double underreamer?

Mr. LYON.—Objected to as leading, incompetent, no foundation being laid, and calling for a conclusion of the witness and as not being a statement of facts.

A. Well, they thought it was a safer reamer in regard [332] to breakage and that the Wilson reamer had advantages over other types in regard to remachining.

Q. 40. How do you know that they thought so; upon what facts do you base that answer?

Mr. LYON.—Same objections as in the previous question; not bearing any relation, etc.

A. They have very hard formation to drill through in that particular country out there, particularly in the Brea Canyon fields, and they have been trying to get down some of their old wells. They are trying to reach what is known as 'burch sand,' and they had more or less trouble with the breaking of cutters

(Deposition of Charles E. Wilcox.)

with the Double reamer. I induced them to try the Wilson reamer; they tried them and have continued to use them since.

Q. 41. Do you know any of the officers of the Union Oil Company?

A. I know Mr. Hill; I believe he is the field superintendent. Also, am slightly acquainted with Mr. Brown, purchasing agent, I believe, and Mr. Pickering, superintendent of the Fullerton field.

Q. 42. Have you at any time *have* any talk with Mr. Pickering about the Wilson reamer?

Mr. LYON.—Objected to as incompetent, hearsay, and not the best *evident*.

Mr. BLAKESLEE.—We are manifestly attempting to show evidence pertinent to the use of underreamers, further pertinent to the quality of the work done thereby and further pertinent to the reamers of the complaint and the defendant.

A. Yes, sir, I have talked with Mr. Pickering regarding the Wilson reamers. [333]

Q. 43. Was this in connection with your service as salesman for the Wilson & Willard Manufacturing Company?

Mr. LYON.—Objected to as leading, incompetent and as calling for a conclusion of the witness; not a statement of facts.

A. Yes, sir.

Q. 44. Can you state any such conversation as you had with Mr. Pickering in this connection?

Mr. LYON.—Objected to as leading, and any such conversation would be objected to as incompetent,

(Deposition of Charles E. Wilcox.)

hearsay, not the best evidence, and it not being shown that the defendant or any of its officers were present during such conversation, or in any manner bound thereby, and should be testified to by the parties expressing the opinions and not by hearsay evidence of what such opinion was.

A. Mr. Pickering said he was very well satisfied with the Wilson reamer. One time in particular he sent a Wilson in to be remachined and asked me when it would be back, and requested me to hurry it up as far as possible, that he did not have another Wilson there, and in a general way gave me to understand that he was very well pleased with the reamer.

Q. 45. When did this occur?

A. A year ago, probably; possibly not so long.

Q. 46. Can you state the name of any other concern using the Wilson underreamer at the present time, since using the Double underreamer?

A. The Coalinde Land Company, I believe, is using the Wilson reamer.

Mr. LYON.—We move to strike the answer from the record on the ground that it is a mere guess, a conclusion and expression of an opinion of the witness; hearsay, incompetent and not the best [334] evidence.

A. I will state that the Coalinde Land Company is using the Wilson reamer at the present time.

At this point counsel for defendant interrupted the proceedings with the statement that the Honorable B. F. Bledsoe, one of the Judges of this court, has announced that he will be in his chambers at

twelve (12) o'clock and prepared to hear the application for a restraining order in this case as notified, and counsel for defendant now requests an adjournment for the purpose of such hearing, it now being the hour of 11:50 A. M.

Mr. BLAKESLEE.—Of course, we do not wish to interfere with the hearing of this motion, and accept counsel's statement that the Court is prepared to hear it, and will repair with him to the chambers of the Honorable Judge.

Whereupon the further taking of testimony herein was adjourned until two fifteen o'clock P. M., at the same place.

On Friday, December 11th, 1915, at 2:15 o'clock P. M., the further taking of testimony herein was resumed, pursuant to the adjournment.

Whereupon the following proceedings were had:

Mr. LYON.—I decline to further attend the taking of the deposition of this witness on the grounds stated in the objections to the deposition of this witness heretofore given, and to the swearing of the witness; and among such objections are the objections that the defendant has a right to complete his cross-examination of the witness E. C. Wilson before the complainant has a right to take the testimony or deposition of any other witness in this case, and the cross-examination of such witness E. C. Wilson has been rendered impossible, due to the attitude of the complainant and [335] complainant's counsel in refusing to permit such cross-examination to take

place before and to be certified, and returned by the notary, I. Benjamin.

The further objection is noted to the testimony of this, or any other witness in this case who may hereafter be questioned that no notice of the taking of the deposition has been given. It is to be noted on the record that at this point counsel for defendant departs from the room and the proceedings, and stands upon the motion now made to strike the deposition of this witness so far heretofore given, from the record and to exclude it from consideration upon each of the grounds stated in the objections therein and noted on the record, and notice is given that a similar motion will be made with respect to any other deposition in this case taken under the present notice, or before the cross-examination of the witness E. C. Wilson is concluded.

Whereupon counsel for defendant departs and is not present at the further deposition of the witness C. E. Wilcox.

Mr. BLAKESLEE.—The record shows that the party Wilson as a witness was produced this morning for cross-examination, and was here all the morning, and that notary, I. Benjamin, was here to be present during his cross-examination. The motion made by counsel for defendant to compel the witness Wilson to testify, was merely that he answer a certain question, and he has been ready here this morning to answer that question in the presence of the said notary, I. Benjamin. Our records show that in accordance with the understanding of the

(Deposition of Charles E. Wilcox.)

counsel for complainant, the Honorable B. F. Bledsoe, in chambers, did this day refuse to entertain the motion and make any order thereon, *i. e.*, the motion brought by counsel for defendant before the said Honorable Judge, and that therefore, there being no reason shown for discontinuing the proceedings, they will be so continued. Counsel for defendant was here this [336] morning during the examination of the present witness, and acted upon such direct examination, and if he wishes to absent himself during the further examination of this witness, it is his privilege.

Direct Examination (Continued).

(By Mr. BLAKESLEE.)

Q. 47. Can you state the name of any other concern using the Wilson underreamer since using the Double reamer?

A. All those names in my previous answer were people that have used the Wilson Reamer after having used the Double Reamer.

Q. 48. Do you mean to include the long list in your answer stating the number of firms using the Wilson Reamer, including the Union Oil Company?

A. Yes, sir.

Q. 49. In how many instances have you seen such Wilson Reamer, if any, in use by these concerns?

A. Practically all of them.

Q. 50. In selling Wilson underreamers to these, and other concerns, please state what selling points or arguments you offered to such prospective purchasers.

(Deposition of Charles E. Wilcox.)

A. Well, I pointed out the facts that the structure of the cutters was stronger than in other makes; that the cutter was wider, it was not liable to give a key seated hole, and also that the body of the reamer could be worn out and then sent to the shop and be remachined and make the body as good as new; and that they were not as liable to lose cutters by breakage.

Q. 51. Do you know whether the Union Tool Company have made any changes in the construction of the cutters of the Double underreamers at any time? A. Yes, sir, I believe they have.

Q. 52. What was the general nature of such change? [337]

A. Well, I believe they built some reamers recently that are practically the same as the Wilson reamer, with an open mouth.

Q. 53. I am talking now particularly about the cutters. Do you know of any changes having been made by the Union Tool Company in the cutters of the Double reamers?

A. Not from personal knowledge, no.

Q. 54. Do you see before you on the floor any other reamer than the Wilson underreamers you referred to? A. Yes, sir.

Q. 55. What do you see there?

A. There are four different Double reamers.

Q. 56. Witness points out Wilson Exhibit, Old-style Double Underreamer Body, Wilson Exhibit Improved Underreamer and Cutter, and, also, two other underreamers lying upon the floor.

(Deposition of Charles E. Wilcox.)

Q. 56. I call your attention to one of the cutters of Wilson Exhibit Improved Double Reamers and Cutters and ask you if you have ever seen such a cutter before. A. Yes, sir.

Q. 57. When did you first see such a cutter?

A. About three years ago.

Q. 58. I call your attention to Wilson Exhibit, old-style Double Reamer-cutter #1 and ask if you have ever seen a cutter like that before?

A. Yes, sir.

Q. 59. When did you first see such a cutter?

A. Three or four years ago.

Q. 60. When was it, with reference to the time you first saw the other cutter of Wilson Exhibit Improved Double Underreamer and Cutter?

A. Well, I would say along about the same time.
[338]

Q. 61. Which did you see first?

A. This one here. (Witness points to one of the cutters, Wilson Exhibit Improved Double Reamer and Cutter.)

Q. 62. How long have you been familiar with underreamers? A. Fifteen years.

Q. 63. And how long have you been familiar with the Double underreamers? A. About ten years.

Whereupon, the further taking of testimony herein was adjourned until Thursday, December 17th, 1914, at 10 o'clock A. M., at the same place.

In the United States District Court, Southern Division of California, Southern Division.

IN EQUITY—No. A-4.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Further proofs taken on behalf of complainant, *in re* Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant, in Equity, No. A-4, pursuant to adjournment, at the office of Raymond Ives Blakeslee, counsel for complainant, at rooms 728-729-730 California Building, Los Angeles, California, before Francis L. Isgrigg, Notary Public, such procedure being continued likewise under Stipulation and record, as provided for the taking of proofs.

Present: RAYMOND IVES BLAKESLEE, Esquire, Counsel for Complainant, and
FREDERICK S. LYON, Esquire, Counsel for Defendant. [339]

Further testimony of the witness, Charles E. Wilcox.

Thursday, December 17, 1914.

Mr. CHARLES E. WILCOX, resuming his direct examination, testified as follows:

(By Mr. BLAKESLEE.)

Q. I will now ask you a little further as to the approximate time when you first became acquainted

(Deposition of Charles E. Wilcox.)

with the Double Underreamer, manufactured by the Union Tool Company.

A. In 1905 I believe was the first time I used one, although I had seen them around the supply-house I believe, previous to that.

Q. And when did you first become acquainted with the Wilson Underreamer?

A. I had seen the Wilson Underreamer around the Bakersfield Iron Works, 1905-1906, along there some time.

Q. And when did you first become acquainted with the so-called 'improved Double underreamer'?

A. About 1908, I believe.

Q. Have you ever seen a cutter similar to the one I now call your attention to, before?

(Counsel shows witness cutter.)

A. Yes, sir, I have seen that.

Q. In connection with what device?

A. In connection with the Double Reamer.

Q. What type of Double Reamer?

A. That would be this one here. (Witness points to Complainant's Exhibit, Old-style Double Underreamer Body, and is testifying with reference to Complainant's Exhibit, Old-style Double Underreamer and Cutter.)

Q. I now show you another cutter and ask you if you have ever seen a cutter of that type before?

A. Yes, sir. [340]

Q. In connection with what reamer?

A. In connection with the reamer known, and

(Deposition of Charles E. Wilcox.)

spoken of as the Double Reamer.

Q. And which type of Double Reamer?

A. This one. (Witness refers to complainant's exhibit Improved Double Reamer and Cutter, of which the cutter just handed him, is an exhibit part.)

Q. Of these two cutters last submitted to you, which type did you first see?

A. This one. (Witness refers again to Complainant's Exhibit, Old-style Double Reamer and Cutter #1.)

Mr. BLAKESLEE.—Let it be noted that the further direct examination of the present witness is pursuant to adjournment and also, to notice for taking further proofs, which is now filed with the notary.

Mr. BLAKESLEE.—Counsel may now examine the witness.

Mr. LYON.—No cross-examination.

At which time, an adjournment was taken until Friday, December 18th, 1914, at the hour of ten o'clock A. M., at the same place.

Further proofs taken on behalf of complainant, pursuant to adjournment, at the same place, at the hour of ten-thirty A. M., December 18th, 1914, before Francis L. Isgrigg, Notary Public.

Present: As before.

Deposition of James C. Hubbard, for Complainant.

JAMES C. HUBBARD, being called as a witness for further proofs on behalf of complainant, being duly sworn, testified as follows and answered the questions as put by Mr. Blakeslee.

(Deposition of James C. Hubbard.)

Mr. BLAKESLEE.—Q. 73. Please state your full name, age, residence, and occupation. [341]

A. James C. Hubbard; thirty-four years; residence, *Englewood*, California; occupation, salesman for the Wilson & Willard Manufacturing Company.

Q. 74. How long have you been connected with that company?

A. About since the 5th of October, this year.

Q. 75. Where is that company located?

A. Santa Fe Avenue, Los Angeles, California; corner Santa Fe Avenue and Fifteenth.

Q. 76. What have been your general duties since your connection with this concern?

A. Selling oil well tools and supplies in the various oil fields in the vicinity of Los Angeles, California.

Q. 77. What fields, in particular?

A. Coalinga, Taft, Santa Maria, and Ventura County, California.

Q. 78. What kind of oil well supplies have you sold in those fields?

A. Underreamers and elevators.

Q. 79. Were these underreamers and elevators known by any particular name in the trade?

A. Wilson underreamers and Wilson Elevators.

Q. 80. And by whom made?

A. By the Wilson & Willard *Manufacturing of* Los Angeles, California.

Q. 81. Can you mention the names of any concerns of interests, or persons to whom you have sold any such Wilson reamers?

A. I can't mention any to whom I have sold any.

(Deposition of James C. Hubbard.)

I have solicited their trade and the orders have come in; not that I have sold them personally, but I know of parties who use them.

Q. 82. Can you give the name of any concerns that have [342] placed such orders through your efforts in those fields, for Wilson reamers?

A. Well, there is—I don't know that they placed their orders through my efforts, but the K. T. & O. and the Standard of Coalinga have placed orders for Wilson reamers.

Q. 83. How recently?

A. Within the last three months, or four months, I should say.

Q. 84. Do you know whether these *interest* had previously used any other type of underreamer?

A. They have used the Double underreamer.

Q. 85. For how long a period of time, if you know? A. I couldn't say as to that.

Q. 86. In the fields you have mentioned, approximately, how many concerns, or interests, are actually drilling oil wells at the present time, if you know?

A. Between the Coalinga and Ventura County fields inclusive, there are about twelve or thirteen companies actually engaged.

Q. 87. Have you, or have you not, visited the properties, or certain property, of each of these companies? A. I have.

Q. 88. Within the last three months?

A. Within the last three months; yes, sir.

Q. 89. And how many of such interests were us-

(Deposition of James C. Hubbard.)

ing the Wilson Underreamers in the development of oil wells?

A. Well, out of the twelve or thirteen companies, there were eight or nine of them actively engaged in using the Wilson reamers.

Q. 90. Can you give the names of such companies?

A. The Standard at Coalinga, the K. T. & O. and the Fillmore Oil Syndicate at Fillmore; Brookline at Santa Maria, [343] Ramona Home at Piru, and the Beatty Oil & Development Company at Piru, California.

Q. 91. Has the Western Union Oil Company any properties in those fields? A. In Santa Maria.

Q. 92. What reamers are they using?

A. Double reamers, at present.

Q. 93. State a little more specifically as to the Standard Oil Company's practice. What reamers are they using?

A. To my knowledge the Standard use the Wilson reamer exclusively in Coalinga, California.

Q. 94. Had they previously used any other underreamer? A. I think they had.

Q. 95. What reamer was that?

A. I do not know, that was before my time.

Q. 96. Do you know how many Wilson reamers they have at the present time?

A. No, I could not say as to the number they now have.

Q. 97. Can you mention any specific instances, within your own knowledge of the recent purchase

(Deposition of James C. Hubbard.)

of a Wilson reamer, and the circumstances surrounding such purchase in those fields?

A. For instance, at Ramona Home at Piru, California, they had at least two Double reamers up there which they had broken and with which they had been having a good bit of trouble, losing lugs, so they adapted the Wilson and since that time they have made seventy-five feet of hole where before they could not get ahead at all.

Q. 98. What is the source of your information?

A. Mr. Root, the head driller and Mr. Bolin the manager of the company told me this.

Mr. LYON.—We move to strike the answer from the record and exclude [344] it therefrom, on the ground that it is incompetent, not the best evidence; hearsay.

Mr. BLAKESLEE.—We oppose the motion on the ground that it is what may be called a 'trade report,' showing operations in the field in question.

Q. 99. Did you sell this reamer to this concern?

A. I did not.

Q. 100. Do you know of any other instance in which the Wilson reamer was recently purchased in these fields, where you were acquainted with the circumstances surrounding such purchase?

A. The Brookline at Santa Maria had a very small three-inch hole and had been using the Double Reamer. He knew he was going to have trouble in that hole, so he purchased a three-inch Wilson which done the work properly.

Mr. LYON.—We move to strike the last portion of

(Deposition of James C. Hubbard.)

this answer from the record and exclude it therefrom on the ground that it is incompetent, and ask the witness at this time if he has personal knowledge of the use of such Wilson Reamer, or is he simply reporting from hearsay?

A. Mr. Bell, the superintendent, told me these things.

Q. 101. Have you, during the last three months, been to the properties of the California Limited Company, in the Coalinga field? A. I have,

Q. 102. Do you know whether they are using the Wilson Reamer?

A. They are using the Wilson Underreamers.

Q. 103. Have you any idea of how many they are using?

A. I could not say as to the number they are using.

Q. 104. Do you know whether they had previously used any [345] other reamer?

A. They had used the Double reamer.

Q. 105. Are they using it at the present time?

A. In the larger sizes.

Q. 106. What type Double reamer are they using, if you know? A. I cannot say as to that.

Q. 107. Did they give you any intimation as to what their future policy would be with respect to the purchase of reamers?

Mr. LYON.—Objected to as leading and suggestive, and as incompetent; not the best evidence of any such conversation being shown to have taken place in the presence of the defendant, or anyone

(Deposition of James C. Hubbard.)

connected therewith, and we submit that this witness has no personal knowledge of such policy, or alleged policy.

Mr. BLAKESLEE.—We are simply trying to show trade conditions and the situation with respect to reamers, out of the mouth of this witness who has recently acquainted himself with such conditions.

A. Why, their chief storekeeper, I don't recall his name, told me that they were very well loaded up with Double reamers in the large sizes at the present time, but that in the future, as soon as these larger sizes were used up, he would in all probability, purchase some Wilsons.

Mr. LYON.—We move to strike this from the records upon the grounds stated in the objection.

Q. 108. I call your attention to the device on the floor before you, which I now point out, and ask you if you have ever seen such a device before.

A. I saw a reamer identical with this one in the Tay-Pike store at Coalinga, California. [346]

Q. 109. When was that?

A. About the 15th of October, 1914.

Q. 110. Under what circumstances did you see such a reamer there at that time?

A. I was in their store, and saw this reamer there on exhibition.

Q. 111. Do you know whether or not it was for sale? A. I could not say as to that.

Q. 112. Were there any other reamers there?

Mr. LYON.—Objected to as leading, suggestive, incompetent, not in the evidence and as witness not

(Deposition of James C. Hubbard.)

being qualified to answer the question.

A. There were.

Q. 113. What is the general business of the Tay-Pike store at Coalinga, California?

A. Oil well supply business; selling oil well tools.

Q. 114. Was this reamer, like the one I have pointed out on the floor here, with the other reamers, or set apart, or how was it on display in the store?

A. I think, I could not swear—I think that—I know this reamer was standing up against the wall and there were other reamers lying on the floor.

Q. 116. Did it have any mark or identification upon it that you remember?

A. None that I remember.

Q. 116. Do you remember any other feature, with respect to that instance, relating to this reamer; that is, further than your mere observation of it at that time?

A. You mean had I heard anything about it?

Q. 117. Do you remember anything further, as to that instance? A. No, sir. [347]

Mr. BLAKESLEE.—Let it be shown on the record that the witness has, in his last answer, been referring to complainant's exhibit Reamer, type "F." Counsel may cross-examine.

United States
Circuit Court of Appeals
For the Ninth Circuit. ²

Transcript of Record.
(IN THREE VOLUMES.)

UNION TOOL COMPANY,

Appellant,

vs.

ELIHU C. WILSON,

Appellee.

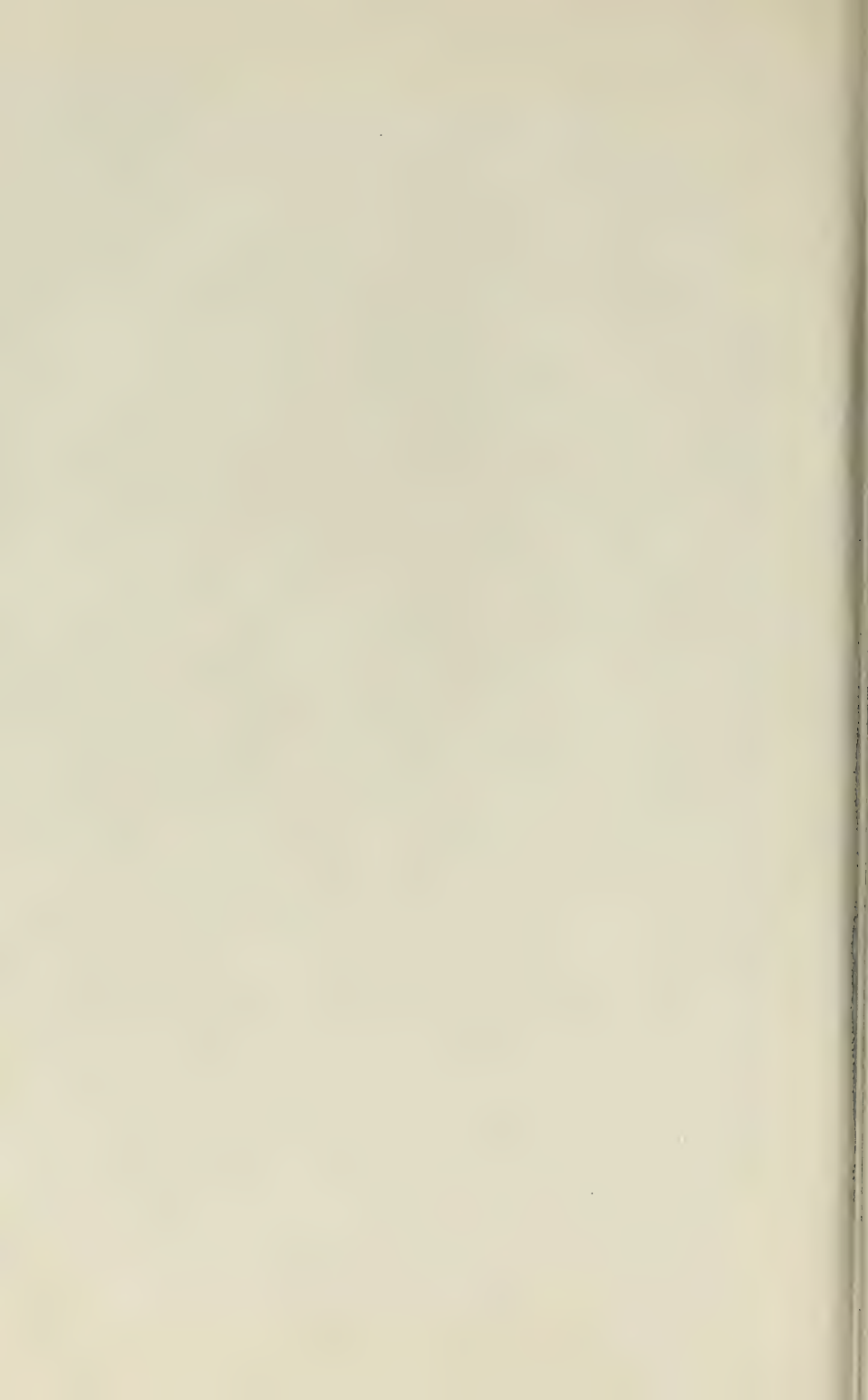
VOLUME II.
(Pages 417 to 800, Inclusive.)

Upon Appeal from the United States District Court for
the Southern District of California,
Southern Division.

Filed

JAN 30 1917

F. D. Monckton,
Clerk.



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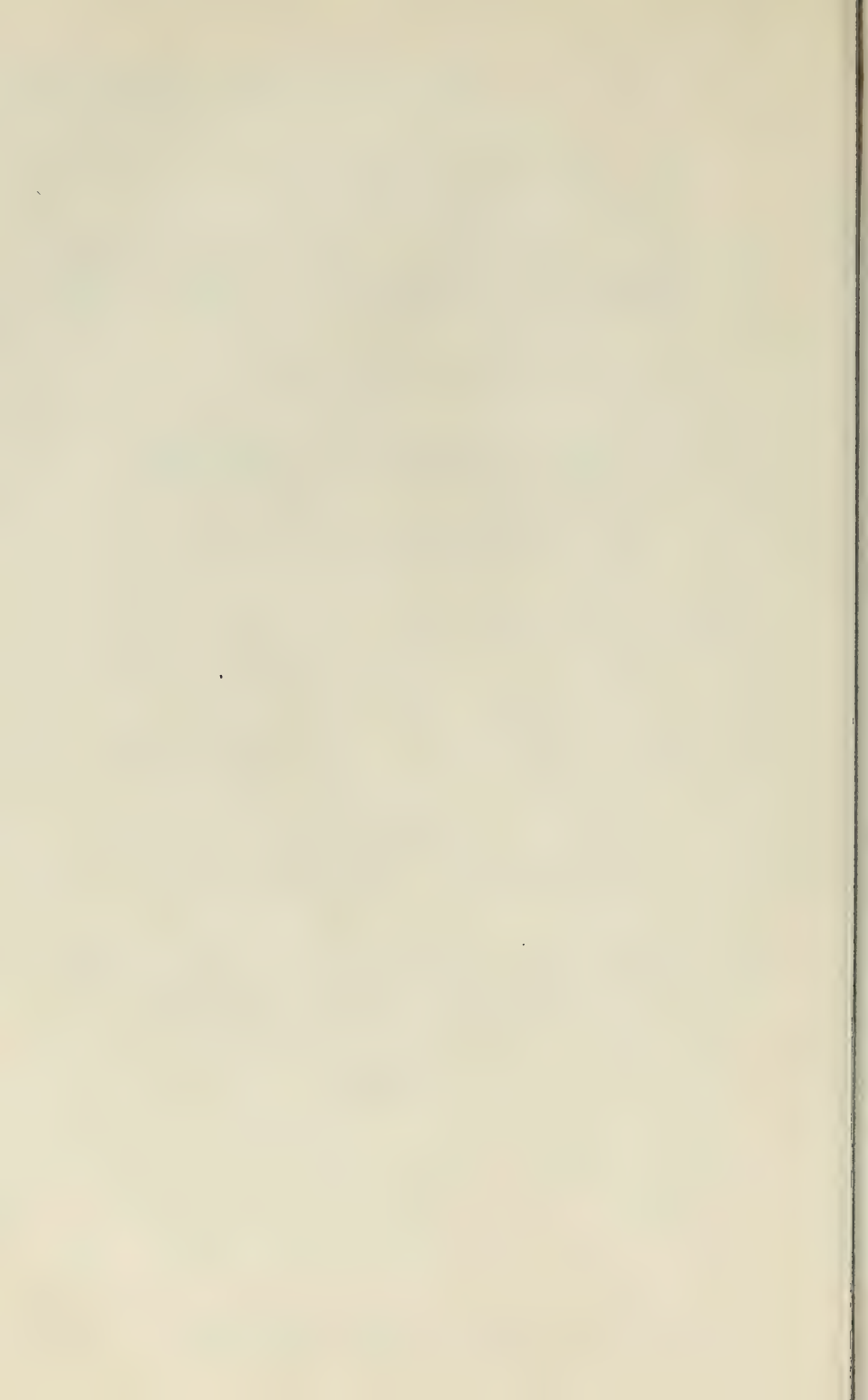
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(Deposition of James C. Hubbard.)

Cross-examination by Mr. LYON.

(Mr. LYON.)

Q. 118. You have indicated in your direct testimony, that you have talked with some of the men connected with the various companies whose names you have given, and who had something or other to do with the use or handling of underreamers in oil wells. Can you tell us any reasons that they have given you for substituting, as you say, the Wilson Underreamer recently, for the so-called Double Improved Reamer?

A. Which do you call the Double Improved?

Q. 119. Like Complainant's Exhibit, Defendant's Reamer, Type "D" for example.

A. Why they claim that the Double cutters break on the bottom of the dovetails; has a tendency to split them out, and also there is more wear on the slot and the lugs; also that the Wilson reamer has the advantage of being remachined from one to three times where the Double, if worn out, they have to buy practically a new reamer.

Q. 120. Are those the only reasons given by such people? A. I do not recall anything else.

Q. 121. How about the question of the strength of the lugs or cutters? Anything else said in that regard?

A. I have not heard much said as to the lugs.

Q. 122. Have you heard anything said as to the lugs that you remember?

A. Only that the lugs wear out in the slots.

Q. 123. Or, have you heard anything said as to

(Deposition of James C. Hubbard.)

whether the Double or the Wilson Reamers have the greater expansion? [348]

A. No, not that I know of.

Q. 124. You found the less difficulty in selling smaller sizes in the Wilson reamers in substitution for the Double Reamers than the larger sizes, did you not?

A. As I said before, I have not sold any direct.

Q. 125. Will you please tell us what you have been doing in your line of selling?

A. I have been soliciting trade.

Q. 126. And how do you solicit trade; how have you been soliciting trade?

A. Calling on the different companies.

Q. 127. What have you had to say to them in regard to the Reamers?

A. Showed the Wilson reamer's advantages.

Q. 128. What advantages?

A. Well for instance, the strength of our cutters, the length of our barrel, the advantages of remachining and the safety, for instance the key and the bottom bolt making the Wilson reamer much safer than the others.

Q. 129. What have you had to say with regard to the strength of the cutters, or lugs, of the Wilson reamers. Please tell us just what you say in soliciting orders for them.

A. The Wilson lugs are not cut out as much in the shank, consequently they are stronger.

Q. 130. Just take one of the Wilson and one of Double lugs and point out to us what you mean by this last remark.

(Deposition of James C. Hubbard.)

(Witness points to the "V" shaped slot in shank in one of the cutters, just above the spreading bearing of one of the cutters of Complainant's Exhibit, Improved Double Reamer and Cutter, such groove being on the inner face of the cutter and for the purpose of permitting the cutter to collapse inward over the end of the body of the reamer.) [349]

A. The Double lug being cut out here (indicating) weakens the lug much more so than the Wilson, on account of the Wilson being without this portion taken away.

(Witness also points to one of the cutters or lugs of Complainant's Exhibit, Wilson Reamer, and to the metal extending between the two expansion bearing faces of the cutters on the side of the cutters and illustrated or identified by the reference 4³ in Complainant's Exhibit, Wilson patent.)

Q. 131. Then it is the expansion of the metal of the shank between these two expansion bearing faces of the cutter to which you have last referred, this metal expanding inwardly between these faces that makes it stronger?

A. It makes it stronger in this portion of it.

Q. 132. And that is one of the features that you have particularly dwelt upon in soliciting orders for the Wilson reamer?

A. That is one of the features.

Q. 133. And did you do that under instructions from Mr. Wilson? A. No, sir.

Q. 134. Where did you get such instructions?

A. Being familiar with the reamer.

Q. 135. That is, your familiarity with the me-

(Deposition of James C. Hubbard.)

chanical portions of the reamer? A. Yes, sir.

Cross-examination closed.

Redirect Examination by Mr. BLAKESLEE.

(Mr. BLAKESLEE.)

Q. 136. Did you take any steps to ascertain in the fields you have visited as testified to, what breakage, if any, had occurred in the cutters? [350]

Mr. LYON.—Objected to as not being redirect examination.

A. Why I don't—there is an instance I was trying to recall but I don't recall it.

Q. 137. What I mean is, did you make any effort to determine what breakages had occurred in reamers and cutters. A. Yes, sir, I have.

Q. 138. And how about losses of cutters? Did you make any investigation about that? Losses in the hole?

Mr. LYON.—Objected to on the ground that it is incompetent, not the best evidence, but apparent that the witness can only have hearsay knowledge of, and not personal knowledge of the subject matter inquired about. Not redirect examination.

A. Why in one instance; I was told by Mr. Root of Ramona Home that they had about fourteen or fifteen cutters lost in the hole.

Mr. LYON.—We move to strike the answer from the records and exclude it therefrom, upon the grounds as stated in the objection to the question, and particularly as it appears that the same is hearsay, incompetent and not the best evidence.

Q. 139. And what type of reamer, or kind of reamer?

(Deposition of James C. Hubbard.)

Mr. LYON.—Same objection.

A. Double reamer.

Q. 140. Manufactured by what concern?

Mr. LYON.—Same objection.

A. Union Tool Company.

Q. 141. The defendant in this case?

Mr. LYON.—Same objection.

A. Yes, sir. [351]

Q. 142. What causes cutters to be lost in the hole?

Mr. LYON.—Objected to as incompetent, no foundation being laid, and witness not being qualified to answer the question.

A. The breaking out of the dovetails would cause it. And for instance, in underreaming, in pulling out, the Double Reamer seems to have a tendency to hang on the bottom of the shoe, and they have to jar it to get the reamer loose; consequently, sometimes they pull the cutters off.

Q. 143. And what do you mean by the shoe?

A. The shoe is the heavy cover on the bottom of the casing.

Q. 144. And the underreaming is performed beneath that shoe, is it not? A. Yes, sir.

Q. 145. Would breakages of cutters cause losses in the hole, or not?

Mr. LYON.—Objected to as incompetent, witness not being qualified to answer the question, and as leading.

A. It all depends on where they were broken.

Q. 146. Suppose the cutters of the Double Reamer were broken at the shanks, or the notched

(Deposition of James.C. Hubbard.)

portion of the shanks which you have referred to, during the reaming operation, what would occur with respect to the portions of the cutters beneath such zones of breakage?

Mr. LYON.—Same objection.

A. Of course the portion of the cutter below the breakage would be left in the hole.

Q. 147. Do you know what they have to do before work can be continued, or drilling continued, in a hole in which [352] cutters are lost?

Mr. LYON.—Same objection.

A. They would either have to fish them out, or side track them.

Q. 148. What is side-tracking?

A. Side-tracking is shoving them off to one side so the casing can go down.

Q. 149. What tool do they side-track with?

Mr. LYON.—Same objection.

A. Well, sometimes they can with the under-reamer, and sometimes they drill them out.

Q. 150. During your trips through the fields which you have visited during the last three months, had you particularly looked for broken cutters?

Mr. LYON.—Objected to as not redirect examination.

A. Not particularly.

Q. 151. Then anything you know about broken cutters, or lost cutters, or breakage of cutters, or strength of cutters in resistance to strains tending to break them, comes from statements that have been made to you by persons in charge of the properties

(Deposition of James C. Hubbard.)

you have visited; is that correct?

A. They have made these statements to me without my asking.

Q. 152. Have you ever been in touch with any of the Beatty Oil Company people?

A. Yes, sir; Mr. Beatty of the Beatty Oil & Development Company.

Q. 153. And when?

Mr. LYON.—Objected to as not redirect examination and as irrelevant [353] and immaterial.

A. Last Saturday was the last I was in touch with Mr. Beatty.

Q. 154. What were the circumstances of that meeting, and where did it take place?

A. I met Mr. Beatty in his office and we took a little machine ride. I also took him down to the Wilson & Willard Manufacturing Company.

Q. 155. Did the question of reamers come up while you were with Mr. Beatty that day?

Mr. LYON.—Objected to as immaterial and as not redirect examination.

A. Yes, sir.

Q. 156. What transpired between you with regard to reamers on that day?

Mr. LYON.—Objected to as incompetent, it being evident that it is an attempt simply to prove a conversation, and it is not shown that the defendant, or any of its officers, or any one connected with the defendant was present at such conversation. The conversation is therefore apparently incompetent and inadmissible and any statement that Mr. Beatty may

(Deposition of James C. Hubbard.)

be alleged to have made at such time, cannot be admitted in the evidence, by the mouth of this witness, the same being incompetent and not the best evidence and such statements not having been made under oath, nor an opportunity offered defendant to cross-examine the maker of such statements.

A. I took Mr. Beatty to the shop and showed him the different reamers in the course of manufacture; showed him the different parts, especially our "T" bar, showing the great strength of it and introduced him to Mr. Wilson. After our conversation, Mr. Beatty seemed to be convinced that the Wilson was the stronger reamer and on leaving, told us that in all [354] probability in the future he would buy the Wilson reamers.

Mr. LYON.—We move to strike the answer from the record upon each of the grounds stated in the objection to the question.

Q. 157. Did anything transpire at the shop with respect to the efficiency of reamers and cutters in general.

Mr. LYON.—Same objection.

A. Mr. Wilson talked with Mr. Beatty as to the strength of our cutters, they being stronger than other makes, and as to the material used in those cutters.

Q. 158. Did Mr. Beatty have anything to say in this connection with respect to his experience with reamers and cutters?

Mr. LYON.—Same objection as noted in the last two questions.

(Deposition of James C. Hubbard.)

A. Mr. Beatty said that he had had a great deal of trouble in *loosing* cutters in the hole.

Q. 159. With what type of underreamer?

Mr. LYON.—Same objection.

A. With the Double Reamer.

Q. 160. And what had those losses been due to?

Mr. LYON.—Same objection.

A. The loss of cutters in the hole?

Q. 161. What had such losses been due to; or what had been the cause of such losses?

Mr. LYON.—Same objection.

A. The cause was the breaking of the cutters in the hole.

Mr. BLAKESLEE.—That is all. [355]

Recross-examination by Mr. LYON.

(Mr. LYON.)

Q. 162. You say that the Double Improved Underreamer like the one I called to your attention, the lugs or cutters have a tendency to hang up when attempt is made to pull out. To what is that due?

A. They don't collapse readily.

Q. 163. Why do they not collapse readily?

A. Well, I cannot say as to why they don't collapse readily, all I know is that they don't.

Q. 164. Is that due to the formation of this shoulder above this "V" shaped groove in the back of the cutter which you showed to us, and the coaction of that on the body portion of the reamer?

A. It is due to this shoulder on the lug.

Q. 165. You mean on the outside face?

(Deposition of James C. Hubbard.)

A. I mean on the outside face.

Mr. LYON.—That is all.

Thereupon an adjournment was taken until ten o'clock A. M. Saturday, December 19th, 1914, at the same place.

Saturday, December 19th, 1914.

Further proofs taken on behalf of complainant, pursuant to adjournment, at the same place, at the hour of eleven o'clock A. M., December 19th, 1914, before Francis L. Isgrigg, Notary Public.

Present: As before.

Deposition of James Pickering, for Complainant.

JAMES PICKERING, being called as a witness for further proofs on behalf of complainant, being duly sworn, testified as follows and answered the questions as put by Mr. Blakeslee.

(Mr. BLAKESLEE.)

Q. 166. Please state your full name, age, residence and occupation. [356]

A. James Pickering, forty-seven years old, foreman for the Union Oil Company, Orange County District, residence Los Angeles, California.

Q. 167. How long have you been in the oil well business? A. Twenty-three or four years.

Q. 168. What kind of work have you done in that business?

A. Principally in the development department; drilling wells, etc.

Q. 169. Mention a number of fields you have been busy in.

(Deposition of James Pickering.)

A. Ventura County, Los Angeles County and Orange County, all in California.

Q. 170. Have you ever used any underreamers in oil drilling or development?

A. I have, yes, sir.

Q. 171. Mention a few of the kinds of such underreamers.

A. I have used the Double reamers and I guess all models that have been gotten out. Also used two of the Wilson reamers.

Q. 172. Do you know by whom those reamers are made?

A. Well, the Double reamer is made by the Union Tool Company and the Wilson is made by the Wilson & Willard Manufacturing Company.

Q. 173. Both of those concerns have shops in Los Angeles, California, have they not, or near there?

A. Yes, sir.

Q. 174. How long have you used the Double reamer?

A. Well, I think ever since the Double reamer was got out, I don't remember just when I used the first one.

Q. 175. How long have you used the Wilson underreamer?

A. I never had any experience with but two Wilson reamers, that is one for 4½ and one 6½ casing.

Q. 176. And when did you have your first experience with the Wilson reamer? [357]

A. I think the first one I used was in the neighborhood of two years ago. I am not sure as to the date.

(Deposition of James Pickering.)

Q. 177. How frequently have you used the Wilson Reamer since that time?

A. Well, I just used those two, that was all we had, if I remember rightly. When one wore out we got a new one.

Q. 178. And how continuously did you use the Wilson reamer which you bought to replace it?

A. It would be hard to say, we used it as occasion required in that sized hole.

Q. 179. And how did you come to be here this morning, Mr. Pickering?

A. I was subpoenaed by the Marshal, he came down yesterday afternoon. I did not see him, but he deputized one of the men in the office to serve the subpoena on me.

Q. 180. That was in this case, E. C. Wilson, vs. The Union Tool Company, was it not?

A. Yes, sir.

Mr. BLAKESLEE.—Have you been tendered your fees for appearing here as a witness in response to the subpoena served upon you?

Mr. PICKERING.—I haven't as yet.

Mr. BLAKESLEE.—What is the distance between this point and the point at which you were subpoenaed?

Mr. PICKERING.—Twenty-four miles.

Mr. BLAKESLEE.—I herewith tender to you three dollars (\$3) witness fee and the sum of two dollars and forty cents (\$2.40) being the legal mileage fee, making the total sum of five dollars and forty [358] cents (\$5.40) which you are entitled

(Deposition of James Pickering.)

to under such subpoena.

(Witness accepts the five dollars and forty cents as witness and mileage fees.)

Cross-examination resumed, by Mr. BLAKESLEE.

Q. 181. What reamer are you now using?

A. At the present moment I am using one 6 $\frac{1}{2}$ Wilson reamer. In the only well we are working on now we are using this reamer.

Q. 182. On what property?

A. On lease #3, Union Oil Company, California.

Q. 183. Located in Orange County?

A. Located in Orange County.

Q. 184. What has been the nature of your experience with the cutters of the Wilson Reamer?

A. In what way?

Q. 185. In any way.

A. Well, we have used them and pulled them out and have never lost one or broken one.

Q. 186. And what has been the nature of your experience with the cutters of the Double Reamers you have used?

A. Well, in the smaller sizes, we have broken them several times.

Q. 187. To what do you attribute such breakage in Double reamer cutters?

A. Well, I don't know; may be in the material; may be in the style of the cutter and may be in the hard usage they got.

Q. 188. I hand to you a reamer cutter and ask you if you have ever seen a cutter like it before?

A. I have, I think.

(Deposition of James Pickering.)

Q. 189. As what, do you recognize that cutter?

A. I think that is what the Union Tool Company call the model Improved cutter. [359]

Q. 190. Have you ever broken any cutters of that type?

A. Why, I couldn't say as to this particular type.

Q. 191. What differences are there between that type of cutter and the Double cutters you have broken?

A. Well, this type here is a little bit heavier than the model "C" cutter.

Q. 192. Do you see any such model "C" cutter before you in this room?

A. Yes, sir. (Witness points to one of the cutters of Complainant's Exhibit, Defendant's Reamer Type "C.")

Q. 193. Where have the breakages taken place in that form of Double cutter?

A. I have broke one or two of those across here (indicating) the general breakage is here where the eye for the key comes through.

Q. 194. What, in your opinion, causes such breakage?

A. Well, that being the weakest part of the cutter—it is probably caused by its being the weakest part.

Q. 195. Have you broken Double cutters in any other parts than there?

A. No, I don't know as we ever broke any only in those two places.

Q. 196. Where is the second place?

A. Well, where the eye goes through, down here

(Deposition of James Pickering.)
(indicating) and down below the end of the shank of the cutter and about midway the broader part of the cutter proper, below the shank.

Q. 197. I show you another cutter and ask you if you have ever used such a cutter as that.

A. I have, yes, sir.

Q. 198. What reamer is that cutter used with?

A. I could not say just what the model is.

Q. 199. What is the name of the reamer?

A. The Double reamer, one of the older models.

[360]

Q. 200. What has been your experience in the use of such cutters?

A. We have broken a few of them.

Q. 201. At what point?

A. Mostly about where the eye goes through.

Q. 202. Any other place?

A. Not to my recollection, as to that particular type.

Mr. BLAKESLEE.—Let it be shown on the record that the witness last referred to Complainant's Exhibit, Old-style Double Reamer and Cutter #1.

Q. 203. Have you used any other type of Double reamers?

A. Well, let's see. We started in with the first he got out and we have used all the types he has got out up until this improved one came out, and I believe there is a type after that that they call their special model "C."

Q. 204. Do you find any such type as last men-

(Deposition of James Pickering.)

tioned on the floor here? If so, please point it out.

(Witness points to Complainant's Exhibit, Reamer Type "C.")

Q. 205. Any other type?

A. Well, not to my recollection.

Q. 206. I understand from your previous testimony that you have used this type, namely, complainant's exhibit, defendant's reamer type "C."

A. Yes, sir.

Q. 207. To what do you attribute the breakage of the cutters in this type of reamer last pointed out?

A. The weakest part is right in here where the pin goes through the eye.

Q. 208. When the breakage occurs down below the shank, to what do you attribute that? [361]

A. That could be caused by a very tense strain in reaming, like driving a hole through hard ground or rock.

Q. 209. In the use of Double reamers, like Complainant's Exhibit, Reamer Type "E," do you have breakages at that point?

A. I never broke one of them.

Q. 210. How do you explain, or what reason do you give, for breakages taking place in the cutters like Complainant's Exhibit, Defendant's Reamer Type "C" below the shanks of the cutters, and not taking place at this same place in type "E."

A. Well the special model "C" reamer is a late pattern and we have only had one of them, and in reaming anywhere from fifteen to twenty string of tools and using these reamers from time to time,

(Deposition of James Pickering.)

those breakages would develop more frequently than if we were using several of them at the same time.

Q. 211. I call your attention to the fact that in Claimant's Exhibit Reamer Type "E" and also in Claimant's Exhibit, Defendant's Reamer Type "D" there are portions of the body extending down between the cutters and against which, portions of the body, the cutters bear; whereas, in Claimant's Exhibit, Defendant's Reamer, Type "C" such portions are not apparent and do not appear to be present. What have you to say as to these differences with respect to cutter breakages, or otherwise.

Mr. LYON.—Objected to as incompetent, no foundation being laid, and the witness appearing from his own testimony and statement that he has not used Complainant's Exhibit, Reamer Type "C" sufficiently to enable him to have the necessary experience therewith to answer the question, or upon which to found any opinion of value in this case.

A. You want my opinion.

Mr. BLAKESLEE.—Whatever you have to say.
[362]

A. The absence of that portion, or dovetail as we call it, would have a tendency to weaken the cutters.

Q. 212. And that would result in what?

A. In breaking the cutters, for the reason that you have no bearing in the cutters like you have here.

Q. 213. That is, no bearing in Complainant's Exhibit, Defendant's Reamer, Type "C."

A. Yes, sir.

(Witness refers in his last answer to the shoulders

(Deposition of James Pickering.)

on the body between the cutters in type "D" and type "E.")

Q. 214. And the absence of those shoulders in type "C" produces what effect?

A. Has a tendency to weaken the strength of the cutters by that reinforcement being absent.

Q. 215. You will notice that in type "D" reamer, under discussion, these shoulders you speak of are found beneath the body portions that are inclined downwardly and outwardly; whereas such inclined portions are not found in type "E" reamer body. Have you anything to say in comparing those two formations?

Mr. LYON.—Same objection as already noted on the record.

A. In this improved reamer, the only thing I can say about it is that we find, in the smaller sizes, that that point which engages downward, or the dovetail as we call it, has a tendency to bell out.

(Witness points to one of the inclined portions referred to in the question in type "D" Reamer.)

A. (Continued.) This is more apt to be the case with the smaller reamers, from six inch down, than it is with the larger sizes.

Q. 216. For that reason, have you any preference between the type "D" and the type "E" reamers? [363]

Mr. LYON.—Same objection as last noted on the record.

A. Well, I have a preference, with a small hole, say six inches down, for the model "C." I would

(Deposition of James Pickering.)

prefer to run type "C," or special model "C" in preference to this improved reamer in a hole from six inches down. I don't usually have any preference but would rather run the improved for the reason that it has wider cutters.

Q. 217. What advantage is there in such wider cutters?

A. Well, they ream off more surface at each stroke; they have a wider cutting surface.

Q. 218. What have you to say as to the length of life of cutters, comparing those with the wider cutting edges with those of the narrower cutting edges?

A. I believe there is not much difference in them. We think we get a little better results with the wider cutters, but as far as the life of the cutter goes I don't know as I ever formed any opinion as to that.

Q. 219. In other words, you never kept track of the life of such cutters? A. No.

Q. 220. And with regard to the material to dress out?

A. The wider cutter would necessarily have more material on account of the width.

Q. 221. And which, if either, has more surface?

A. The wider the cutters the more surface there is.

Q. 222. What has been your experience in breakages of cutters of Double reamers, that is, as to the result of such breakages.

A. When we break one, we generally leave one or two in the hole and have to drill them up or side track them; sometimes we fish them out; it causes quite a little trouble if you get [364] that piece of steel

(Deposition of James Pickering.)

in there; sometimes you can get by it, but it causes a good deal of trouble if you get the broken cutters, or any iron loose in there.

Q. 223. And when these breakages of Double cutters take place and cutters are lost in the hole, what is necessary to be done before further drilling can be carried on?

A. We try to fish them out, and if we can't fish them out, we drill on them, and either pound the drill on them until they are all broken up or pounded off onto the side of the well and are sucked up by the sand pump. Sometimes they stick in the bottom and follow along for a hundred feet or more. In a few instances we have fished them out.

Q. 224. What expense is connected with such jobs?

A. Well, that would be hard to state what the expense would be. It is according to how long the cutter bothers you. In drilling in a soft formation you can get rid of them more easily than in a hard formation. It would be pretty hard to say what expense would be attached to the loss of one of those cutters or parts of them.

Mr. BLAKESLEE.—That is all.

Mr. BLAKESLEE.—Just a moment.

Q. 225. When the dovetail formations on the reamer you have referred to, like type "D," 'bell out' as you say, what results?

A. Well, it is according to how bad it is belled out; if it is bad enough to split off the dovetail, it makes the reamer useless and we throw it away.

Mr. LYON.—No cross-examination. [365]

Mr. LYON.—After further inspection of the underreamer which has been marked Complainant's Exhibit, Reamer Type "E," it is admitted that the said reamer was made and sold by the defendant company subsequent to the commencement of this suit, and was made and sold within the Southern District of California, Southern Division. This admission is made, after external inspection only, and upon the assumption and stipulation that the portions which are obscured from view, when the reamer is assembled, as it is now, and the parts, or portions or parts, and the coaction thereof, and the workings of the device which cannot be seen from such external inspection, are substantially the same in construction, and general organization, as the corresponding parts of Complainant's Exhibit, Defendant's Reamer, Type "D."

It is further stipulated and admitted that the reamer, marked Complainant's Exhibit, Reamer Type "F" was made and sold by the defendant company within the Southern District of California, Southern Division, since the commencement of this suit and within the last year.

Mr. BLAKESLEE.—In view of the stipulation and admission just made by the defendant, with respect to Complainant's Exhibit, Reamer Type "F," which we are prepared to show to the Court was not before complainant at the time the bill herein was filed, nor at the time the *prima facie* proofs in this case, in the early part of this year were taken, nor

at the time that the election was made by complainant to stand upon certain portions of the patent in suit, as indicated more particularly by claims sixteen and seventeen of the patent in suit, and the supplementary portions of the disclosure of the patent in suit, complainant finds it necessary, in order to make out a full case of infringement against the defendant, to take proper steps to depart from the election heretofore [366] made as above recited, that the election we are prepared to stand by with respect to the alleged infringing structures, other than Complainant's Exhibit, Defendant's Reamer, Type "F."

We therefore make inquiry of defendant, whether it will voluntarily, and on stipulation, permit complainant to withdraw and depart from said election in treatment of this type "F" reamer construction, or whether defendant will put us upon procedure to obtain permission to so depart from such election, or to file a supplemental bill herein, or take other procedure in the premises to the end that in this same case in equity, all of the alleged infringing structures before us, may be before the Court, and passed upon by the Court at the final hearing of this case.

Mr. LYON.—That the defendant may fully understand complainant's position, and before making any answer to the question of complainant's counsel, it will be necessary for complainant to state upon the record, what departure he wishes to make with respect to any alleged infringement by Complainant's Exhibit, Reamer Type "F" from the election to claim infringement only of claims sixteen and seven-

(Deposition of W. H. Bailey.)

teen of "Complainant's Exhibit, Wilson Patent" sued on herein. In other words, what claims of said patent in suit, does complainant contend are infringed by Complainant's Exhibit, Reamer Type "F."

Mr. BLAKESLEE.—Complainant, in order to so specifically depart from the election herein made, submits that at the next session of taking proofs herein, he will, through his counsel, submit, or before such time submit to counsel for defendant, a specification of such further claims of the remaining portions of the patent which it is desired to allege are infringed by such Complainant's Exhibit, Reamer Type "F." [367]

Mr. LYON.—I will answer complainant's inquiry fully when their position is fully developed. At the present time, I insist that complainant is bound by his election in this suit.

Deposition of W. H. Bailey, for Complainant.

Whereupon, W. H. BAILEY, Jr., being called as a witness for further proofs on behalf of complainant, being duly sworn, testified as follows and answered the question as put by Mr. Blakeslee:

Direct Examination by Mr. BLAKESLEE.

Q. 226. Will you kindly state your full name, age, residence and occupation?

A. W. H. Bailey, Jr., age forty-one, residence 1940 Huntington Drive, South Pasadena, California. Occupation, oil well operator; oil well driller.

Q. 227. In what properties are you working at the present time?

(Deposition of W. H. Bailey.)

A. Olinda, part of the Fullerton fields, Orange County, California.

Q. 228. How many oil wells are you operating at the present time?

A. I am running three crews.

Q. 229. That is in drilling?

A. Drilling and overhauling oil wells.

Q. 230. How many wells have you down there in that property?

A. We are just rigging up number sixteen.

Q. 231. That is, the sixteenth in number?

A. Yes, sir.

Q. 232. How long have you been in the oil development industry?

A. Somewhere around twelve years I guess, steadily. [368]

Q. 233. And in what territory principally?

A. In that territory entirely.

Q. 234. Have you used underreamers in your development work.

Mr. LYON.—Objected to as leading.

Mr. BLAKESLEE.—Strike it out.

Q. 235. What is the general nature of your personal work or services at the present time?

A. General manager and president of the company.

Q. 236. What is the name of that company?

A. The Olinda Land Company.

Q. 237. Mention the names of a few of the kinds of device or apparatus which your company use and have used in oil development work.

(Deposition of W. H. Bailey.)

A. Well, do I understand by that that you want more than one article mentioned?

Q. 238. That is to say, are you using underreamers at the present time? A. Yes, sir.

Q. 239. How long have you been using underreamers?

A. How long have they been in existence? We have used them so many years, I don't remember.

Q. 240. What is the general nature of your personal services in the capacity you occupy for this company?

A. General supervision of the whole property.

Q. 241. Including field work?

A. No, that is attended to by the field superintendent.

Q. 242. Are you, or are you not, accustomed to visit your property from time to time.

A. I am accustomed to visiting, and also take charge sometimes when the superintendent is absent.
[369]

Q. 243. In taking charge, what service do you perform?

A. Full service of Field Superintendent.

Q. 244. And full personal supervision of drilling operation? A. Yes, sir.

Q. 245. What types of underreamers has your company used when you were acting for it in the capacity of superintendent?

A. We have used the underreamers made by the Union Tool people and also by the Wilson & Willard Manufacturing Company.

(Deposition of W. H. Bailey.)

Q. 246. The first is known as the Double and the second as the Wilson Underreamer. Is that correct? A. I think so.

Q. 247. Which of these did you use first?

A. The Double.

Q. 248. How long have you been using the Wilson Reamer?

A. Mr. Wilson can answer that better than I can.

Q. 249. Approximately.

A. About six months, isn't it? (Referring to Mr. Wilson.)

Q. 250. How long before that did you use the Double Reamer?

A. So many years, I don't remember. We have used it several years.

Q. 251. The factories of these concerns are located in or near Los Angeles, California, are they not?

A. Yes, sir, I purchased them through the supply houses.

Q. 252. Under what circumstances did you commence the use of the Wilson Reamer?

A. We had a great deal of trouble with the six-inch Double Reamer on account of the lugs or cutters breaking off, and after looking into the Wilson Reamer, I bought one and tried it out. [370]

Q. 253. What were the results of such trial?

A. That I probably will never use another Double six-inch reamer.

Q. 254. What reasons move you to that conclusion?

(Deposition of W. H. Bailey.)

A. Because, we have never lost a Wilson under-reamer-cutter since we bought one of the reamers.

Q. 255. And had you ever lost any cutters of other reamers? A. Repeatedly.

Q. 256. And what reamers? A. The Double.

Q. 257. What were such losses due to?

A. Delays as in drilling. We most always have to drill those cutters up which of course is an expense, a loss of time and material.

Q. 258. How did those cutters come to be lost?

A. They would break off.

Q. 259. Please look upon the floor here and see if you find a specimen of any such Double cutter.

A. That (pointing to cutter type "C") looks very similar to it.

Q. 260. I show you another specimen of cutter and ask you if you have ever seen one like that?

A. It looks like a Double cutter.

(Witness refers to one of the cutters of Complainant's Exhibit, Improved Double Reamer and Cutter.)

Q. 261. Any breakage in connection with cutters of this last type? A. Yes, sir.

Q. 262. At what point in the cutter did such breakages occur?

A. Right here. (Witness indicates the zone extending across the shank of the cutter through the eye.) [371]

Q. 263. With reference to what did you attribute such breakage at this point?

A. To two reasons. Partly that it is so weak

(Deposition of W. H. Bailey.)

through here that it cannot stand the strain; and then, to poor material.

Q. 264. Ever had breakages at other points with this cutter?

A. Well, not that I have personally noticed. I think we have but I don't remember any instance.

Q. 265. I show you another type of cutter and ask you if you know what it is.

A. I am not conversant enough to tell you what type that is, but I think it is a Double.

Q. 266. Have you that kind of a cutter?

A. That I could not tell you offhand.

Q. 267. Do you find on the floor here before you, another type of Double cutter that you have ever used?

A. Yes, sir. (Witness points to complainant's exhibit defendant reamer type "D.")

Q. 268. Have you anything to say with respect to the use of that type of Double reamer?

A. What do you mean by that question?

Mr. BLAKESLEE.—Well, state generally, any experience you have had with that type of Double reamer and cutter.

A. We have had some experience with all cutters of the smaller sizes of Double make, but whether we had exactly that kind or not I could not swear. It looks on the face of it, like the same kind of cutter as we have used.

Q. 269. Do you remember using any other type of cutter than those you have pointed out as being

(Deposition of W. H. Bailey.)

familiar with, prior to the use of such cutter as you have referred to, which is Complainant's Exhibit, Improved Double Reamer and Cutter? [372]

A. The two reamers I have named are the only two I ever remember we used; don't think we used any other make.

Q. 270. In the early days of your experience with Double reamers, what did you encounter with respect to breakages, etc., with these Double cutters?

A. How far back?

Mr. BLAKESLEE.—As far back as you wish to go.

A. As I remember it, a number of years ago we did not have the trouble we do now.

Q. 271. That is in breakage?

A. Yes, sir. Maybe it was on account of the formation, or the strings of tools were not so heavy; whatever it was, we did not have the trouble then that we do now.

Q. 272. Were those cutters of the same width as the types you used later?

A. I don't know.

Q. 273. As I understand you, in using the Wilson Reamer in the last six months or so, you have not lost or broken any cutters. Is that correct?

A. So far as I know, I have not heard of any.

Q. 274. Had there been any, would such breakages come to your notice in the course of your business? A. Yes, sir.

Q. 275. Through whom are reamers purchased, and the parts therefor purchased, for your company?

(Deposition of W. H. Bailey.)

A. The Double reamers are purchased through the supply houses, but the Wilson Reamers we have purchased direct.

Q. 276. More particularly I mean, through whom, in your company, are such orders placed?

A. All orders, when I am here, are supposed to come before me before they are sent out. [373]

Q. 277. What has been your experience in the use of the Wilson underreamer with respect to its action in entering the hole and being withdrawn from the hole?

A. That is something I would not care to answer, because I am not familiar enough *enough* with it; haven't been out there at that particular time.

Q. 278. Have you anything to state in that connection in comparison of the Wilson and Double underreamers?

Mr. LYON.—Objected to as incompetent, no foundation having been laid and the witness not being qualified to answer the question. The witness stated himself that he was not out there at that particular time.

A. What do you mean exactly by that?

Q. 279. Is there anything within your knowledge that you can tell us as to the action of these two reamers in those respects, comparing the one with the other, as within your knowledge?

A. I don't believe I understand it yet.

Q. 280. Do you wish to in any way compare the Double and Wilson reamers, as to the manner in which they both enter the hole and are withdrawn

(Deposition of W. H. Bailey.)

from the hole? A. No, I wouldn't care to.

Q. 281. What has been the experience of yourself, and your company, as to the use of the Wilson reamer for the purpose for which a reamer is intended?

Mr. LYON.—Objected to as incompetent, no foundation having been laid, and witness not qualified to answer the question, and all of the deposition of this witness of whom questions were asked and answers given, is objected to upon the same ground, and motion is now made to strike the same from the record and exclude it from consideration. [374]

A. So far as the six inch goes the Wilson reamer will be my preference in the future.

Q. 282. Have you used any other sizes of the Wilson but the six inch? A. No, I don't think so.

Q. 283. When breakages in reamer-cutters occur on your properties, to whom, if anyone, in your company, are such breakages reported?

Mr. LYON.—Objected to as leading, incompetent, no foundation having been laid and witness not being qualified to answer the question; calling for a conclusion on the part of the witness; not the proper method of proof.

A. It is reported to me.

Mr. BLAKESLEE.—That is all. Counsel may cross-examine.

Mr. LYON.—No cross-examination.

Whereupon, an adjournment was taken until eleven o'clock Monday, December 21st, 1914, at the same place, subject to counsel for defendant being able to be there at that hour.

Monday, December 21st, 1914.

Further proofs taken on behalf of complainant, pursuant to adjournment, at the same place, at the hour of two-thirty P. M., Monday, December 21st, 1914, before Francis L. Isgrigg, Notary Public.

Present: As before.

Mr. BLAKESLEE.—In response to inquiry of counsel for defendant, as [375] to what further portions of the Wilson Patent in suit complainant wishes to rely upon in departure from the election of record, as to the charge of an infringement with respect to Complainant's Exhibit, Reamer Type "F," counsel for defendant is informed that the following further claims, together with the pertinent portions of the specification and drawings of the Wilson Patent in suit, are believed to be involved by said last-mentioned exhibit, to wit: Claims 2, 4, 8, 9, 10, 11, 12, 13, 14, 15 and 19.

We now again ask counsel for defendant if he is prepared to state his attitude with respect to such departure from said election, with respect to this last-named exhibit.

Mr. LYON.—Inasmuch as the construction of the reamer exemplified in Complainant's Exhibit Reamer, Type "F" has been produced by the defendant since the commencement of the taking of proofs in this case and long since the answer of defendant in this suit, and inasmuch as this suit has heretofore progressed upon an alleged charge of infringement of claims sixteen and seventeen only, complainant does not object to the determination of

a charge of any alleged infringement, or charge of infringement, by the manufacture or sale of reamers like Complainant's Exhibit, Reamer Type "F" in this suit, and will raise no question as to the bringing in of such reamer in this suit, to try the alleged question of infringement thereof, such claim of infringement being limited in accordance with the limitations of the election heretofore made by complainant in this case, but insists that for all purposes of this case, complainant is bound by such election, and cannot interject into this case any other matter. The bill in this case was an allegation of general infringement and complainant, upon the record, thereafter elected and stated that claims sixteen and seventeen were the only claims relied upon, thereby limiting this suit to that issue, and in effect, dismissed the suit as to any and all other [376] claims of said Wilson patent. Defendant will insist that complainant is bound by such election and cannot at this point set aside or abrogate such election, and defendant will leave complainant to such procedure as complainant is advised to take in the matter, defendant objecting to any attempt to extend this litigation beyond the scope of the election and stipulation so made on the record by complainant.

Mr. BLAKESLEE.—We cannot agree with counsel's statement that we have in any way whatsoever dismissed this suit as to any part of the patent sued under, which dismissal would be a direct or overt act and not an indirect act. We do not traverse

his contention that we have made an election in this suit, but we call his attention to the fact that the bill alleging infringement of the patent generally, is to be presumed as having been answered likewise generally; that the election was not made until the taking of proofs commenced in the case, and after the bill was answered; and that no proofs have been taken on behalf of the defendant, so that it cannot be seen wherein the defendant can be taken by surprise, or can in any manner be prejudiced in meeting the *prima facie* case under the pleadings. As this patent has never been adjudicated, we believe proper that it be adjudicated as broadly and completely in this suit as it can be, commensurate with such proofs of infringement of any part of it as may be produced, and that the bringing of another suit to test the infringement thereof, and with respect to Complainant's Exhibit, Reamer Type "F," would simply be increasing the litigation before this Court, and simply postpone the adjudication which should properly be had at the same time that the other matters of alleged infringement are considered and passed upon by the Court.

In conclusion, we cannot see that defendant can be prejudiced [377] in any manner in the trial of this further suit, or subsuit, at this time, and if defendant still abides by the position as stated, we shall be compelled, after pleading our *prima facie* case, to petition the Court for such relief, or to sanction such further ancillary procedure as may seem proper to provide for full hearing on the question of infringement by this defendant at the final hearing of this Court.

Mr. LYON.—I suggest, that in order to save expense, and to expedite this case, that the taking of proofs in this case be suspended, and that counsel make such motion as he may desire with reference to this matter and put it on the Motion Calendar of this Court, for the next day thereof, which I understand is January 11th, 1915, and that the matter be settled before going to the expense of taking proofs herein. This would most certainly be the most orderly way in which to conduct the case, and would give both parties the judgment of the Court upon the procedure.

Mr. BLAKESLEE.—As there are admittedly certain portions of this patent, including claims sixteen and seventeen, open under the present pleadings for determination of the question of infringement, it cannot be seen why these proceedings, which are close to a conclusion, should be for the purpose of hearing, or other purpose, suspended, and we shall therefore finish these proofs and take up the matter of proper procedure with respect to the election of record at an early date thereafter, with the permission of the Court.

Mr. LYON.—Defendant gives notice that if this suit is proceeded with, and an attempt to try, or determine, the alleged infringement of the Wilson patent, and particularly as to claims sixteen and seventeen under the election heretofore made with [378] respect to, and concerning the type of reamer exemplified in Complainant's Exhibit Reamer, Type "F," defendant shall insist that the complainant thereby elects to charge infringement only of claims

sixteen and seventeen, and that any decree in this suit will be *res adjudicata* as to any allegation of infringement of such type of reamer. In other words, that complainant cannot split up this cause of action, or alleged cause of action, for alleged infringement of the Wilson patent, and try the question of alleged infringement of claims sixteen and seventeen by the manufacture and sale of the reamer, like Complainant's Exhibit Reamer, Type "F" in this suit, and thereafter bring another suit or bill of complaint alleging infringement of any other claim or claims, of said alleged Complainant's Exhibit, Wilson Patent.

That is to say, that if complainant prosecutes this suit as to reamers like Complainant's Exhibit, Reamer Type "F" to a conclusion, under the election heretofore made, defendant shall insist that complainant has had his day in the Court, with respect to said Wilson patent, and any claim of infringement thereof of like reamers, like Complainant's Reamer Type "F."

Mr. BLAKESLEE.—We are not proposing to prosecute this case to a conclusion, prior to application for relief from our election with respect to Complainant's Exhibit Reamer Type "F"; we are only proposing to complete our *prima facie* showing and thereupon to make application for relief in the matters and particulars above set forth. Manifestly it is proper at this time to deal with this exhibit with respect to claims sixteen and seventeen, and upon the final hearing, we of course, shall not urge infringement of other claims of the patent, or this ex-

hibit, unless so permitted by the Court; but this reamer, having been admitted to have been made and sold by the defendant, it is believed proper to make such application for relief from such election; not after [379] the proofs are all concluded in this case, but prior to the taking of any proofs by the defendant and we inquire of counsel for the defendant whether he will insist that such procedure, namely, such winding up of the *prima facie* case of complainant, without application made for such relief, will be urged by him to be a bar to the filing of a bill alleging general infringement of the patent in suit by Complainant's Exhibit Reamer Type "F," should such relief from such election be in this suit refused by the Court.

Mr. LYON.—The consent heretofore given by defendant to the interjection into this case of any issue with regard to the construction of the underreamer exemplified by Complainant's Exhibit Reamer Type "F," was upon the understanding and assumption by defendant, that the charge of infringement thereof was limited to claims sixteen and seventeen of the alleged Wilson patent in suit, and after the election and stipulation heretofore made on the record by complainant, and it was solely upon this ground that the defendant consented thereto and waived the necessity for a separate suit or a supplemental bill, or other procedure on the part of the complainant with respect to such new construction of underreamers.

Answering directly counsel's statement, will state that the taking of any proofs with respect to the

construction, or alleged infringement of reamers, like Complainant's Exhibit Reamer Type "F" will be considered by defendant to be an election to proceed under this understanding, and an election to claim that such reamers, like Complainant's Exhibit Reamer Type "F" infringed only, claims sixteen and seventeen of said alleged Wilson patent, and defendant will insist and maintain if possible, that by such procedure, complainant is bound by such election and that the same is a bar to any claim of infringement of any, or [380] other alleged claims of such alleged letters patent. Defendant will therefore insist that if complainant produces further proofs in this case with respect to reamers like Complainant's Exhibit Reamer Type "F," complainant is proceeding under this election heretofore made in this case, and abandoning all claims of such Wilson patent other than claims sixteen and seventeen, with respect to such new type of reamer like Complainant's Exhibit Reamer Type "F."

Mr. BLAKESLEE.—Then, as I understand counsel, if the proofs involving such Complainant's Exhibit Reamer Type "F" be limited to their present status, prior to application for an elaboration of the scope of proofs with respect to the patent in suit in this case, the question of election as to the infringement of any part or claim, of the patent in suit by such Complainant's Exhibit Reamer Type "F" will be an undetermined question until the Court has passed upon such application for relief from such election, and that if such relief be refused in this suit, an independent suit will lie with respect to said

Complainant's Exhibit Reamer Type "F," charging infringement of the patent in suit generally.

Mr. LYON.—I thought that my statement was plain. Defendant's position is this. If complainant takes any further proofs in this case, with respect to reamers like Complainant's Exhibit Reamer Type "F," defendant will insist that, by so doing, complainant elects to stand upon the charge of infringement as to claims sixteen and seventeen with respect to reamers like Complainant's Exhibit Reamer Type "F," to the same extent and for all purposes and exactly the same manner and in legal effect the same, as under the election heretofore made with respect to the reamers heretofore alleged to be infringed. I do not know [381] how I can make this much plainer. It is for complainant to decide whether complainant will bring this reamer, like Complainant's Exhibit Reamer Type "F" into this suit, under a charge of infringement of claims sixteen and seventeen only, and accept defendant's agreement that so doing, no supplemental bill will be required; or, take such action as he is advised he may take. Defendant insists that if any proceeding whatever is taken in this case at the present time, in its present condition with respect to reamers like Type "F," they are taken under the election heretofore made, and that complainant will be bound thereby, and cannot thereafter ask, or seek to extend the charge of infringement; but, on the contrary, any such pretended claims of infringement of anything other than claims sixteen and seventeen of the patent in suit, have been waived and abandoned by complainant.

Mr. BLAKESLEE.—The situation seems to be clear. It is to be our contention that further claims than sixteen and seventeen of the patent in suit are involved by Complainant's Exhibit Reamer Type "F," and the proofs to date, in the procedure to date, have, of course, taken place under the election of record with respect to claims sixteen and seventeen. As we do not understand that an infringer may escape a charge of infringement by more closely approaching the construction, or organization of the patented device, or by more extensively invading the territory and monopoly of the patent and patentee; or, in other words, in enlarging its infringing activities as we shall contend has been the case with respect to the proceedings and sale of Complainant's Exhibit Reamer Type "F," complainant shall urge that any evidence of such further and more complete infringement, must make proper the enlargement of the scope of inquiry and proof as to such more extended infringement, and in order that such enlargement [382] of scope of inquiry and proofs may be properly provided for, prior to completing the *prima facie* proofs in this case, we will stand upon the record as so far made for complainant, and notice is given to defendant as to claim of further infringement, until such time as the enlargement of such scope of inquiry and proofs shall be properly provided for. In other words, Complainant's Exhibit Reamer Type "F" has been admitted by defendant to have been made and sold by it, and is here in the evidence. It speaks for itself. Whether or not, further proofs may be necessary in

this respect, we will determine and consider, after we shall have made application for such relief or right to enlarge the scope of inquiry and proof, which application will be made upon due notice.

Mr. LYON.—Defendant insists that complainant must elect either to file a new suit, or bring in the charge of infringement by reamers like Complainant's Exhibit Reamer Type "F" under the charge of infringement instituted in this case; that is, limited to claims sixteen and seventeen. It is complainant's option to file a new suit, or limit its alleged claim of infringement as indicated. If complainant desires to extend its charge of infringement, it cannot be done in this suit.

At which time the proceedings were suspended until the Court could rule upon the matters contained therein. [383]

United States of America,
State of California,
County of Los Angeles,—ss.

I, Francis L. Isgrigg, a Notary Public in and for the County of Los Angeles, State of California, duly commissioned, sworn, and qualified to administer oaths, etc., do hereby certify that the witnesses in the foregoing depositions named, to wit, Charles E. Wilcox, James C. Hubbard, James Pickering, and W. H. Bailey, Jr., were by me duly sworn according to law to testify the truth, the whole truth, and nothing but the truth; that the said depositions were taken at the time and place agreed upon by stipulation of solicitors before the respective parties, and pursuant to notices filed herein; beginning on Satur-

day, the 11th day of December, 1914, at the office of solicitor for complainant, 728-30 California Building, Los Angeles, California, at the hour of ten o'clock A. M. of said date, and thereafter from day to day, to and including Monday, the 21st day of December, 1914; and that the foregoing is a full, true and correct transcript of the depositions of said witnesses and of the proceedings taken in connection therewith.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on this 22d day of February, 1916.

FRANCIS L. ISGRIGG. (Seal)

Notary Public in and for Los Angeles County, State of California.

[Endorsed]: 'In the United States District Court, Southern *Division* of California, Southern Division. Elihu C. Wilson, Complainant, vs. Union Tool Company, Defendant. In Equity, No. A-4. Further Proofs Taken on Behalf of Complainant. Deposition of Charles E. Wilcox. Filed Feb. 23, 1916. Wm. M. Van Dyke, Clerk. By Chas. N. Williams, Deputy Clerk. [384]

Office of Raymond Ives Blakeslee, California Building.

Los Angeles, Cal., December 17, 1914.

IN 'EQUITY—No. A-4.

E. C. WILSON,

vs.

UNION TOOL COMPANY.

Mr. BLAKESLEE.—Further proceedings on behalf of complainant in the above-entitled case, before I. Benjamin, Notary Public, pursuant to the stipulation made in open court, upon presentation of motions made by defendant and heretofore appearing on the record, such stipulation being entered into to dispose of such motions without order.

**Deposition of E. C. Wilson, for Complainant
(Recalled—Cross-examination).**

E. C. WILSON, hitherto produced on his own behalf, is now and again produced for further cross-examination, it being understood that he may at this time answer the question with respect to the date of the production and of manufacture by the Wilson & Willard Manufacturing Company of the first Wilson reamer of the single-piece-key type, by consent of complainant, as evidenced by the order of the Court confirming such consent.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

FREDERICK S. LYON, Esq., Solicitor
for Defendant.

E. C. WILSON, recalled, cross-examination resumed.

(By Mr. LYON.)

XQ. 341. The first question under the order of the Court asked the witness on further cross-examination, is as follows: I note that "Complainant's Exhibit Wilson Underreamer" does not conform to the drawings of the Wilson patent, "Complainant's [385] Exhibit Wilson Patent," particularly in that the tee rod or mandrel has been slotted and the ar-

(Deposition of E. C. Wilson.)

range of the coil spring has been changed to a degree, and the tee rod is mounted by means of a key passing through the slot in the tee rod, the spring holding the key in place, and the tension of the spring bearing against a nut on the upper end of the tee rod or mandrel. When did you first make an underreamer embodying this changed construction?

Mr. BLAKESLEE.—This question is objected to as purporting to be the question which was agreed might be answered, as approved by the order of the Court, being not the question to compel an answer to which the motion was brought. With such objection registered, there is no further objection to the question itself being answered.

A. The first underreamer of that type was made some time during February, March or April, of the year 1911. The order was entered on February 3, I believe, of 1911.

XQ. 342. (By Mr. LYON.), What reason have you to give for having so changed the construction of the underreamer from the device described in the specification and shown in the drawings of "Complainant's Exhibit Wilson Patent," so as to utilize therein the features of construction particularly referred to in the preceding question?

Mr. BLAKESLEE.—Objected to as not cross-examination, irrelevant, immaterial and incompetent to prove any of the issues of this present suit.

A. It was for the purpose of overcoming the difficulty sometimes experienced in the screws of the older type becoming 'stuck or rusted into the body,

(Deposition of E. C. Wilson.)

in which case it was difficult to remove them, and this single-piece key was designed by myself to overcome that difficulty.

XQ. 343. (By Mr. LYON.) The screws to which you have referred in the Wilson reamer of the construction or type illustrated in "Complainant's Exhibit Wilson Patent," also became burred or [386] injured, so as to be impossible or very difficult of removal, and often required the drilling of such screws out; is that correct?

Mr. BLAKESLEE.—The same objection.

A. The difficulties had with the block and screws were due to the carelessness on the part of the driller, very largely, and could have been overcome had they given proper care to the screws. But many men are very careless in using an underreamer, and proper care was not always given to the reamer. The trouble was not in the burr of the block and screws, but was due to their rusting or sticking, due to a failure to keep the screws properly lubricated. In that event they would sometimes become burred if they attempted to force the screws loose.

QX. 344. (By Mr. LYON.) And to remove them they required drilling out?

A. When they became rusted or stuck in there, due to such carelessness, it was often necessary to drill them out.

XQ. 345. And prior to the time you commenced the use of the single-piece key type of cutting means, between the tee bar or tee rod or mandrel and the body of the reamer, you had also tried a 2-piece key

(Deposition of E. C. Wilson.)

devised for that purpose, had you, in the Wilson reamer?

Mr. BLAKESLEE.—The same objection.

A. We had made a 2-piece key type, yes.

XQ. 346. (By Mr. LYON.) And you had abandoned that type prior to the adoption of this single-piece key type like “Complainant’s Exhibit Wilson Underreamer,” had you?

Mr. BLAKESLEE.—Objected to as calling for a legal conclusion with respect to the use of the term “abandoned,” and as indefinite if calling for a statement of facts.

A. I don’t know that we abandoned it. We were not at that time manufacturing them, due to the fact that the tees were much lighter than afterwards discovered they could be made. [887]

XQ. 347. (By Mr. LYON.) And for how long just prior to the making of the first reamer like “Complainant’s Exhibit Underreamer,” with the single-piece key construction for holding and assembling the tee rod or mandrel in the body, had you been manufacturing the block-and-screw type?

Mr. BLAKESLEE.—The same objection is noted as to the next to the last preceding question, and as indefinite.

A. I don’t remember.

QX. 348. (By Mr. LYON.) It had been at least two years, had it?

A. Yes, sir; I think so.

Q. 349. And during that two years just preceding the adoption of the single-piece key type of device

(Deposition of E. C. Wilson.)

for assembling and holding together the tee-rod, mandrel, spring, etc., in the body, you had not manufactured or sold any of the 2-piece key type that you have referred to? Is that correct?

Mr. BLAKESLEE.—The same objection.

A. We had made the parts for them, yes.

XQ. 350. (By Mr. LYON.) When you say you “made the parts,” you mean the repair parts?

A. I don’t mean the repair parts; I mean the actual parts.

XQ. 351. But you had not made or sold any complete reamers of that 2-piece key type?

A. I don’t remember.

XQ. 352. Did you not so testify in your deposition in the United States Patent Office in the interference of your application against the patent of Robert E. Bole, Interference No. 37,126?

Mr. BLAKESLEE.—The same objection.

A. Possibly.

XQ. 353. (By Mr. LYON.) It is a fact, is it, that for some time prior to the first making and sale and demonstration [388] of the Wilson under-reamer like “Complainant’s Exhibit Wilson Under-reamer” here in evidence, and provided with a single-piece key for assembling the tee rod or mandrel, spring and bits in the body of the reamer, and for enabling the quick and ready disassembling of the reamer or removal of the bits, the sales of the Wilson reamer as manufactured by you, or by the Wilson & Willard Manufacturing Company for you had steadily and for a considerable time dropped off?

(Deposition of E. C. Wilson.)

A. I don't think so. I think our records show that our sales were pretty satisfactory during all that time. I am willing to testify, if this is what you are trying to get at, that I was never satisfied with the block-and-screw type underreamer. Otherwise I would not have changed to the slotted tee and double key type in the year 1907. I adopted the use of the double key, thinking that was better than the single-piece key type. I had the single-piece key in mind away back in 1906, and after much deliberation adopted the double-piece key instead of the single-piece key. I had used the double-piece key in the construction of the Wilson casing spear, and its satisfactory use led me to believe that it would possibly be better than the single-piece key. The block-and-screw type had its troubles, and I never ceased to think and endeavor to devise improvements on the Wilson underreamer, and my efforts finally culminated in the discovery that I could make the slotted tee of much greater weight and strength than the one I had previously used, thus overcoming the chief difficulty experienced in the use of the slotted tee of the light type and the double-piece key. At the time of adopting these extra heavy slotted tees in 1907, I made up my mind that I would then use the single-piece key which had occurred to me many times before.

XQ. 354. Now please answer the question, as to whether the sales of the Wilson underreamer fell off in any degree [389] whatever, or whether the trade and users of the Wilson underreamer were be-

(Deposition of E. C. Wilson.)

coming dissatisfied therewith as put out in the block-and-screw type, like the drawings, and the description of the Wilson patent, "Complainant's Exhibit Wilson Patent," just prior to or at any time prior to your adoption and first use of the single-piece key type of cutting device, as exemplified in "Complainant's Exhibit Wilson Underreamer."

Mr. BLAKESLEE.—Objected to as not cross-examination, irrelevant and immaterial, and incompetent to prove any issue in this suit, and not the proper method of proof. If counsel wishes to prove for his own case the state of mind or attitude of the trade with respect to the Wilson underreamer, or the parts thereof, this is not the time and place to do so. And, furthermore, the witness has answered the question.

A. If there was any shifting of the demands for the Double underreamers, or for Wilson underreamers, in favor of the Double, it was due to the improvement of the Double underreamer, which improvement we claim infringed the Wilson underreamer patent, and which are the questions involved in this suit.

Mr. LYON.—We move to strike the answer from the record and exclude it from consideration on the ground that it is not responsive to the question, as hypothetical, and incompetent, and no foundation laid; and that it is the mere conclusion of the witness and not a statement of facts, and ask that the preceding question be reread to the witness and that he answer the same yes or no.

Mr. BLAKESLEE.—The same objection.

A. I don't know that it fell off any. If it did, the reasons were as I have stated above.

(Deposition of E. C. Wilson.)

XQ. 355. (By Mr. LYON.) Then your answer to the question is no.

A. There was an increased demand for underreamers at [390] that time owing to an increased activity in business. The Double improved underreamer was securing certain business which had been enjoyed by the Wilson underreamer of the block-and-screw type, and which business the block-and-screw type Wilson underreamer had taken away from the Double underreamer business and which was done prior to the time the Double underreamer was improved or changed to their new type employing some of the features which we claim to be covered by the Wilson underreamer patent. We cannot see that the block-and-screw type should be adopted by a company and later on discarded for another reamer, unless it was due to the improvement in the other reamer, which was the Double reamer, in this case.

XQ. 356. Then you are prepared to state that the discarding of the so-called block-and-screw type of Wilson underreamer, to wit, that shown in "Complainant's Exhibit Wilson Patent," was not due to defects in such block-and-screw type, are you?

A. Yes, sir; it was due to the improvement of the Double underreamer, our competitor.

XQ. 357. And had nothing to do with the defects of such block-and-screw device?

A. The defects in the block-and-screw device existed from the beginning. I do not see how they could be held responsible for the loss of business when they had at one time secured the business.

XQ. 358. The demand, however, for the block-

(Deposition of E. C. Wilson.)

and-screw type of Wilson underreamer did fall off, then, did it?

Mr. BLAKESLEE.—Objected to as indefinite and that no time is stated.

A. We lost business which we had had, or at least a portion of the business.

XQ. 359. (By Mr. LYON.) And are you prepared to state that [391] that was not due to the defects of such block-and-screw device for holding the tee rod or mandrel in the body and the difficulties of disassembling the reamer or removing the bits?

A. It was not wholly responsible for it.

XQ. 360. To what degree was it?

Mr. BLAKESLEE.—Objected to on the same ground.

A. If the Double had been as originally manufactured at the time the Wilson underreamer first went on the market, and took the business away
I.B. from the Double underreamer there would have been no change back to the/Double/un-reamer.

XQ. 361. (By Mr. LYON.) Will you please answer the question? We move to strike the preceding answer from the record as not responsive.

A. I have answered the question.

XQ. 362. And your answer is that the falling off of the sales of such Wilson underreamer, and the trade dissatisfaction therewith, was not due to such block-and-screw device?

A. I have answered the question.

XQ. 363. Will you please answer this question yes or no?

(Deposition of E. C. Wilson.)

A. The question has been answered. I do not see any occasion for answering it any more.

XQ. 364. Then you refuse to give us a direct answer to the question, which will not be reread to you?

Mr. BLAKESLEE.—The witness has gone fully into the reasons for the shifting about or changing of sale conditions, or relative sales, as between the two underreamers, and it cannot be seen wherein there is any propriety in further incumbering the record with repetitious questions.

A. I have answered the question in my own language. I do not propose to have Mr. Lyon frame a question for me to answer yes or no. I have answered the question.

XQ. 365. (By Mr. LYON.) Did the use of the block-and-screw [392] fastening device for holding the tee rod or mandrel in the body of the Wilson underreamer, and its use for disassembling the reamer for the purpose of removing the bits, have anything whatever to do with the dissatisfaction of the trade and users of the Wilson underreamer?

Mr. BLAKESLEE.—Objected to as improperly defining the structures referred to. It is therefore indefinite, and it is repetitious.

A. I have answered the question.

XQ. 366. (By Mr. LYON.) You decline to give any other answer than you have given?

A. I have answered to the same point this morning.

XQ. 367. You have testified this morning that in 1906 or seven you had conceived the idea of using a single-piece key device for connecting the tee rod or

(Deposition of E. C. Wilson.)

mandrel with the body of the Wilson underreamer. It is a fact, is it, that until in February, 1911, you had no conception of how such device could be removed from the body of the reamer in disassembling the reamer or permitting the removing of the bits?

Mr. BLAKESLEE.—Objected to as not cross-examination, irrelevant, incompetent and immaterial, and as indefinite, and not referring particularly to a single-piece key. A. Absolutely not.

A. Absolutely not.

XQ. 368. (By Mr. LYON.) In your I. B. interference

deposition in the ~~intervention~~ No. 37,126 in the U. S. Patent Office, now pending between yourself and your application for patent on the underreamer like "Complainant's Exhibit Wilson underreamer" and the patent issued to Robert E. Bole for such single-piece key improvement therein, did you testify that on or about February 3 or 4, 1911, or somewhere along there, you called a conference in the shop of the Wilson & Willard Manufacturing Company at Los Angeles, California, of your brother W. W. Wilson, Mr. A. G. Willard, your associate in [393] the Wilson & Willard Manufacturing Company, Mr. Charles E. Wilcox, one of your salesmen therein, and said Robert E. Bole, and in talking with them about this single-piece key device as shown in "Complainant's Exhibit Wilson Underreamer" state, "When I showed them that key and called attention to the fact that it would hold itself in place by means of the tension of the spring, and could not work out at either end of the key-slot, I said, 'The trouble with

(Deposition of E. C. Wilson.)

the key is, I cannot take it out. I don't know how to take it out.' And at that juncture R. E. Bole said, 'Simply pry it out. Pry it out at one end.' I said, 'That is all very well—' We would have to pry it out, 'but I do not think we have room enough to pry it out? He said, 'Yes you can; you can pry it out at one end.' I said, 'Possibly so, but some tool would have to be devised to do it,' and he said, 'I can devise a tool that will pry it out.' "

A. I refuse to answer the question, because it is not cross-examination, and I am not going ahead with this deposition any longer if you cannot confine yourself to cross-examination. You can play that on me once or twice, but after that I am going to stop. You have worked your defense for other cases several times, but not any more.

Mr. BLAKESLEE.—In the first place, we object to the question as not cross-examination, irrelevant, immaterial, incompetent to prove any issue in this case, and a mere effort to stuff the record, and a wide departure from any fair spirit of interpretation of the consent of the witness Wilson to testify as to a certain question which has already been answered at this session, and we further object to the question on the ground that it places a false or improper construction upon the issues of the interference stated, and I demand that the witness be confronted, if the question is to be properly answered at all, with the said testimony in the interference. We repeat, that we cannot [394] see where this question tends in any manner to prove any issue in this case, or that it is anything more than an attempt to confuse the

(Deposition of E. C. Wilson.)

issues in this case and stuff the record.

XQ. 369. (By Mr. LYON.) I will show the witness—

A. (Interrupting). No use. I won't answer the question. How can that be cross-examination if you bring in stuff that occurred entirely after the said deposition was taken?

XQ. 370. Then you refuse to answer the question?

A. Certainly. It is not cross-examination at all.

Mr. BLAKESLEE.—In this connection we will state that so far as the testimony in the interference is concerned, it speaks for itself, and we are willing that counsel for defendant, if he can find and show any reason for the propriety for so doing, may read the portions of the testimony which he is purporting to have quoted in the question at the trial of the case.

Mr. LYON.—Do I understand that such consent is that one of the printed copies of E. C. Wilson's record in such interference as has been furnished by Wilson to me as counsel for Bole in such interference may be used with the same force and effect as though duly certified, and, if held competent at the hearing, may be used without offering prior to the hearing?

Mr. BLAKESLEE.—Yes; as to the portions purported to have been referred to in this last question, and subject to comparison with the original certified depositions on file in the Patent Office, as to any discrepancies.

Mr. LYON.—Such comparison will be made by you as counsel for Wilson, will it?

(Deposition of E. C. Wilson.)

Mr. BLAKESLEE.—No. If there is any variance we shall take steps to point it out.

Mr. LYON.—Otherwise the printed record will stand as correct?

Mr. BLAKESLEE.—Yes. [395]

XQ. 371. (By Mr. LYON.) After you and your manufacturing company, the Wilson & Willard Manufacturing Company, commenced putting out the Wilson reamers like “Complainant’s Exhibit Wilson Underreamer,” with a single-piece key holding a removing device therein, the Wilson underreamer regained its popularity with the trade?

Mr. BLAKESLEE.—Objected to as calling for a conclusion, not the proper method of proof, not cross-examination, irrelevant, immaterial and incompetent to any of the issues in this suit.

A. It is not cross-examination, and I won’t answer the question. Let the attorney confine himself to cross-examination and I will proceed. Otherwise I will withdraw. If he is through with his cross-examination, all right. If he wants to put his own defense in here, let him call his own witnesses.

XQ. 372. (By Mr. LYON.) Since the adoption or making of the first Wilson underreamer with this single-piece key device for holding the tee rod or slotted tee bar and bits in place in the body of the reamer, in the manner illustrated in “Complainant’s Exhibit Wilson Underreamer,” neither you nor the Wilson & Willard Manufacturing Company have made or sold any of the 2-piece key device of the Wilson underreamer or Wilson underreamers of the

(Deposition of E. C. Wilson.)

block-and-screw fastening device, as illustrated in "Complainant's Exhibit Wilson Patent," have you?

Mr. BLAKESLEE.—Objected to as stating a conclusion as to the function of the key referred to.

A. Thousands of dollars' worth of them; yes, sir. We sold the block-and-screw type of reamers in large quantities.

XQ. 373. (By Mr. LYON.) When did you sell the last of them? A. Quite recently.

XQ. 374. Where, and to whom?

A. That is a matter that I do not care to disclose. It is a trade secret. [396]

Mr. BLAKESLEE.—Objected to as not cross-examination, and an unnecessary and improper inquiry to the specific acts of complainant's business, insofar as it goes beyond the question as to the general sale of such reamers.

XQ. 375. (By Mr. LYON.) Since the adoption and manufacture by you or by the Wilson & Willard Manufacturing Company for you of reamers like "Complainant's Exhibit Wilson Underreamer" with the single-piece key device therein, to whom, or to what extent, at least, have you or said company made or sold Wilson underreamers with the block-and-screw devise for holding the tee rod in place, like that or those illustrated in the drawings or described in the specifications of "Complainant's Exhibit Wilson Patent."

A. To a very considerable extent, as I have testified before.

XQ. 376. You refuse to answer the question

(Deposition of E. C. Wilson.)

otherwise than the answer you have given?

A. I don't see that it need be disclosed here who buys those reamers or who has used them.

XQ. 377. And did you sell any such block-and-screw type of underreamer in the state of California after it became known that you were making and offering for sale reamers like "Complainant's Exhibit Wilson Underreamer"?

A. It is not cross-examination. I will not go ahead with this deposition, Blakeslee, if you don't cut it out.

Mr. BLAKESLEE.—That is a proper question. We concede that is a proper question, as it deals with the sales of the underreamer made in accordance with the patent in suit.

A. Sales were made in California; yes, sir.

XQ. 378. (By Mr. LYON.) And to what extent?

A. I have testified to that about four or five times.

XQ. 379. You refuse to give any other information than you have given? [397]

A. Yes, sir.

Mr. BLAKESLEE.—The question is answered. The witness has answered that sales have generally been made of that type of reamer since the time stated.

Mr. LYON.—Counsel's statement is objected to as not evidence, and the attention of the court is called to the refusal of the witness to answer these questions and the impossibility of securing any accurate information from the witness in regard to these acts with

(Deposition of E. C. Wilson.)

relation to these various changes in the Wilson reamer.

Mr. BLAKESLEE.—The record speaks for itself, and if counsel wishes to make part of his case the selling conditions involving this reamer, it is to be assumed that he will not do so when he takes his proofs. The attention of the court is further called to the fact that counsel for defendant has repeatedly heretofore in this record volunteered the statement that the issues of this suit concerned the cutters disclosed and claimed in the patent in suit.

XQ. 380. (By Mr. LYON.) In order that there may be no misunderstanding of the record, Mr. Wilson, and to clarify the same, I call your attention to the fact that Question 279 put to you on cross-examination referred to what other reamers besides the Double reamer and the Swan reamer you had seen prior to the time you offered your first reamer like "Complainant's Exhibit Wilson Patent," or had worked out such reamer in your mind, and in answer to questions 283 to 285 inclusive, you identified the O'Donnell & Willard reamer. You intended by those answers to state that you were familiar with such O'Donnell & Willard reamer as set out in questions 283, 284, 285, and the answers thereto, prior to any alleged conception of the alleged invention as set forth in "Complainant's Exhibit Wilson Patent," did you?

Mr. BLAKESLEE.—In the first place, questions 283 to 285 refer to the O'Donnell & Willard reamer, and therefore we object [398] to the question as

(Deposition of E. C. Wilson.)

not properly summarizing the testimony referred to. In the second place, we object to the question as attempting to put an arbitrary construction upon the purport of the questions and answers referred to, and as not cross-examination, and irrelevant, incompetent and immaterial to prove the issues of this suit, and dealing with matters which relate to the defense, if anything, which may be considered in this case.

A. I am not sure that I even saw the O'Donnell & Willard underreamer prior to my conception of the Wilson underreamer.

XQ. 381. (By Mr. LYON.) Will you state positively that you did not?

A. No; I won't state positively, but I don't know that I did. I may have seen it.

XQ. 382. It was made in the shop of the Baker Iron Works where you were employed and at the time you were employed therein, was it?

A. Yes, sir.

Mr. BLAKESLEE.—The same objection to all this line of questions.

XQ. 383. (By Mr. LYON.) And prior to the conception of your invention?

A. Yes, sir; but at that time I was in the office and had nothing to do with the shop work. I was keeping the books, and what was being manufactured in the shop and for whom, were matters which did not concern me.

XQ. 384. What was your position there at that time?

A. At the time that reamer was being manufac-

(Deposition of E. C. Wilson.)

tured I was bookkeeper.

XQ. 385. Were you not order clerk?

A. I believe not. I think that reamer was made when I first went to — No; I think I was still bookkeeper at the time that reamer was made. [399]

XQ. 386. You have seen that reamer, have you not?

A. Yes, sir.

XQ. 387. When, in accordance with your present recollection, was the first time you had ever seen such reamer, and I refer to the O'Donnell & Willard reamer, as set forth and identified by you in the questions and answers called to your attention.

Mr. BLAKESLEE.—Attention is again called to the fact that the questions refer to the O'Donnell & Willard patent.

A. I am not sure that I saw that underreamer prior to the time that it was brought to the shop of the Wilson & Willard Manufacturing Company.

XQ. 388. (By Mr. LYON.) And approximately when was that?

A. I have forgotten that date.

XQ. 289. Prior to the conception by you of the alleged invention in underreamers set forth or described in "Complainant's Exhibit Wilson Patent," you had seen and were familiar with the O'Donnell & Willard Patent No. 762,435, were you?

Mr. BLAKESLEE.—Objected to as not cross-examination and not the proper method of proof, if proof can be of any avail in this case, and in effect substantially repetitious of previous questions.

(Deposition of E. C. Wilson.)

A. I knew such patent existed, but I do not know that I ever saw the patent.

XQ. 390. (By Mr. LYON.) You were acquainted with Arthur G. Willard, one of the patentees, long prior to your alleged conception of the alleged invention described and shown in "Complainant's Exhibit Wilson Patent," were you?

Mr. BLAKESLEE.—The same objection.

A. Yes, sir.

XQ. 391. (By Mr. LYON.) And he was at work in the same shop with you, was he?

Mr. BLAKESLEE.—The same objection.

A. He was a machinist and I was price clerk or order [400] clerk part of the time. I was not a machinist and did not work with him.

XQ. 392. (By Mr. LYON.) You were well acquainted with him at that time, though?

A. Yes, sir.

XQ. 393. And you knew that he had been working on underreamers?

Mr. BLAKESLEE.—The same objection.

A. Yes, sir.

XQ. 394. (By Mr. LYON.) And at many times talked underreamers with him prior to the alleged conception of your alleged invention, had you?

Mr. BLAKESLEE.—The same objection.

A. Yes, sir.

XQ. 395. (By Mr. LYON.) And had talked with him in regard to either this O'Donnell & Willard patent that I have identified or the application for such patent?

(Deposition of E. C. Wilson.)

Mr. BLAKESLEE.—The same objection.

A. No, sir; I don't know that I had.

XQ. 396. (By Mr. LYON.) Will you state that you had not?

Mr. BLAKESLEE.—The same objection.

A. If I did, I don't remember any of the details. I do not remember that I was at all familiar with the design of the O'Donnell & Willard underreamer.

XQ. 397. (By Mr. LYON.) Will you state positively that Mr. Arthur G. Willard had not shown blue-prints or blue line prints of the drawings of the application upon which such O'Donnell & Willard patent No. 762,435 was subsequently issued, prior to the alleged date of your alleged conception of your alleged invention set forth or described or illustrated in "Complainant's Exhibit Wilson Patent"? [401]

Mr. BLAKESLEE.—The same objection, and any patent of that designation is not before us in any manner at this time.

A. I don't remember of any such occurrence.

XQ. 398. (By Mr. LYON.) Will you answer the previous question yes or not?

Mr. BLAKESLEE.—The same objection, and the question has been answered.

A. I will frame my own answers, and say that I don't remember of any such transaction.

XQ. 399. (By Mr. LYON.) You are not prepared then to state positively that you did not see such blue line prints, or blue-prints of said drawings, prior to your alleged conception of your alleged invention, are you?

(Deposition of E. C. Wilson.)

Mr. BLAKESLEE,—The same objection.

A. I believe I never saw them until after Arthur G. Willard and I went into partnership, long after the date referred to.

Mr. LYON.—The defendant gives notice that at the hearing of this case motion will be made to compel the witness Wilson to answer each and all of the questions which he has declined to answer, and notice is given for the production of such Wilson at the final hearing of this case; and in case of the non-production of such witness at such hearing, or his failure to answer such questions fully, and to produce the fullest information in regard to the subject matter inquired about, we shall submit the motion which is now made to strike from the record and exclude from consideration the entire deposition of the witness upon the ground and for the reason that the witness has refused to answer questions on cross-examination. Subject to the production of such witness and the ruling of the court thereon, the cross-examination of the witness is now completed.

Mr. BLAKESLEE.—We are under stipulation to take these [402] proofs out of court, but counsel may be sure that the complainant will be in court upon the final hearing of this case, if alive and able; and we shall most heartily and faithfully comply with any order which the court may make in the respects noted, and most ardently desire to have the propositions raised by counsel considered by the court at that time, at which time we shall also present notice of motion to strike out the whole cross-examination of

(Deposition of E. C. Wilson.)

the witness Wilson as being in the main an attempt to introduce within the *prima facie* case matters which pertain to the defense, if they pertain to anything at all pertinent to the issues in this case, which counsel must know is absolutely at variance with the rules of evidence, and for which there is no proper precedent.

Mr. LYON.—The question of knowledge of counsel either for complainant or for the defendant will be submitted for the court for its determination. We do not accede to the arrogant statement of counsel for the complainant, nor to his judgment as to the competency, relevancy, materiality or character as cross-examination, of any of the questions asked this witness on cross-examination. And the procedure adopted by counsel for the defendant is adopted in view of the fact that in the several litigations pending in which this witness Wilson is a party, there have been already numerous references to the court for orders to compel the witness to answer questions, and it is believed that the procedure adopted by defendant's counsel will meet with the express desire of the court.

Mr. BLAKESLEE.—If the attitude of counsel for complainant is arrogant, we contend that the attitude of counsel for the defendant is impertinent, and we will leave the whole matter to the court on that basis and on the record.

The witness Wilson being recalled for further direct examination as a witness in this case, and questioned by Mr. Blakeslee, testified as follows: [403]

(Deposition of E. C. Wilson.)

Mr. LYON.—Then you have no redirect?

Mr. BLAKESLEE.—No.

Direct Examination (Resumed)

(By Mr. BLAKESLEE.)

Q. 400. (By Mr. BLAKESLEE.) At this time mention the names of any concerns or parties to whom you have sold Wilson underreamers substantially like "Wilson's Exhibit Wilson Reamer," and who had previously purchased Double underreamers of either the old type or the improved type, such as you have discussed in these proceedings.

Mr. LYON.—Objected to as leading.

A. I can.

Q. 401. (By Mr. BLAKESLEE.) Have you any memoranda by which to identify such persons or concerns?

A. Yes, sir.

Q. 402. Have you that here present?

A. Yes, sir.

Q. 403. Please refer to such memoranda, stating what the memoranda is in nature, and giving the names of such persons or concerns, or number of the same.

A. I can give the names of a good many of them without referring to the memorandum.

Mr. LYON.—That is objected to as not the best evidence, and as incompetent and no foundation laid.

Q. 404. (By Mr. BLAKESLEE.) You may, if you wish, state the number of such names, or identify such persons or concerns, from memory, prior to referring to such memorandum.

(Deposition of E. C. Wilson.)

A. The Union Oil Company of California, the Standard Oil Company, the Kern Trading & Oil Company, the California Oil Fields, Limited, the Rancho La Brea Oil Company, the Central Oil Company of Whittier, the Security Oil Company of Sunset, the [404] Section 25 Oil Company, the El Camino Oil and Development Company, the Olinda Land Company, the Brea Canyon Oil Company, the Columbia Oil Producing Company, I believe it is called, — Ben Scott is president of that company — the Asiatic Petroleum Company, the Burmah Oil Company, the Mexican Petroleum Company, and a great many others that I can refer to. Those are some of the principal companies. There are a great many others.

Q. 405. Can you state generally where these concerns or parties are located?

A. They are in California, in Mexico, India. The General Petroleum is another one.

Q. 406. Where is the Union Oil Company which you have referred to located?

A. Their offices are in the Union Oil Building, Seventh and Spring Streets, Los Angeles, California.

Q. 407. Can you state of your own knowledge whether there is or has been any connection of any kind between this Union Oil Company and the Union Tool Company, the defendant in this suit?

Mr. LYON.—Objected to as incompetent, calling for a conclusion of the witness, no foundation laid, and leading.

A. Yes, sir; it is my information that they are connected.

(Deposition of E. C. Wilson.)

Mr. LYON.—We move to strike the answer from the record and exclude it from consideration on the grounds stated in the objection to the question, and upon the further ground that the witness' answer shows that the answer is given on information and belief and not on personal knowledge.

Q. 408. (By Mr. BLAKESLEE.) Are you acquainted with any of the officers of either of these companies? A. Yes, sir.

Q. 409. With what officers of which companies?

A. William Stewart, Chester Brown, Mr. Hill. I don't [405] know what Mr. Chester Brown's office is; I don't know what his title is.

Q. 410. With what company is he connected?

A. The Union Oil Company, and I understand he has some office in the Union Tool Company.

Mr. LYON.—We move to strike the preceding answer and each part and parcel thereof from the record and exclude it from consideration, upon the ground that it is apparent therefrom that the witness has no personal knowledge of the matters to which he has testified, and that the same are hearsay and not the best evidence.

Q. 411. (By Mr. BLAKESLEE.) With what company is Mr. Stewart connected?

A. The Union Oil Company and the Union Tool Company.

Q. 412. Do you know what his office is in each of these companies?

A. He is president of the Union Oil Company, and, I think, he is vice-president of the Union Tool

(Deposition of E. C. Wilson.)

Company. I don't remember. I have seen it on Dun and Bradstreet—and on the Dun Mercantile reports.

Mr. LYON.—We move to strike the answer and each part and parcel thereof from the record and exclude it from consideration as incompetent, not the best evidence, hearsay, and the mere guess or conclusion of the witness as to a matter of which he has no personal knowledge.

Q. 413. (By Mr. BLAKESLEE.) Am I correct in understanding you to testify that Mr. Stewart is an officer of the Union Tool Company?

Mr. LYON.—Objected to as leading and as incompetent, no foundation laid, the witness not having qualified to answer the question, and it appearing from his previous answers that he has no personal knowledge as to the matters inquired about. [406]

A. Yes, sir.

Mr. BLAKESLEE.—The last answer speaks for itself.

Q. 414. Do you know whether the Union Oil Company ever used any Double reamers furnished it by the Union Tool Company?

Mr. LYON.—Objected to as leading.

A. Yes, sir.

Q. 415. (By Mr. BLAKESLEE.) Do you know
I.B. Oil

whether the Union ~~Tool~~ Company is now using any Wilson reamers?

Mr. LYON.—Objected to as leading.

A. They are.

(Deposition of E. C. Wilson.)

Q. 416. (By Mr. BLAKESLEE.) When did you last sell Wilson reamers to the Union Oil Company, and if you refer to a memorandum, state what that memorandum is.

A. I believe we sold to them in the month of December, although the posting is not made before the month of December on this account.

Q. 417. What year?

A. I refer to our ledger on the year 1914, to the account of the Union Oil Company.

Mr. LYON.—I move to strike the answer from the record and exclude it from consideration on the ground that it is incompetent, not the best evidence, and the mere belief or expression of the witness, and it is apparently a matter of which he has no personal knowledge.

Q. 418. (By Mr. BLAKESLEE.) What ledger do you refer to as a memorandum?

A. The ledger of the Wilson & Willard Manufacturing Company, of which I am president.

Q. 419. How many reamers did you sell to the Union Oil Company in December, 1914?

Mr. LYON.—The same objection.

A. I will have to refer to the sale sheet. [407]

Q. 420. (By Mr. BLAKESLEE.) Can you state approximately from your own knowledge?

A. No.

Q. 421. When did you first commence selling Wilson underreamers to the Union Oil Company?

Mr. LYON.—Objected to as incompetent, no foundation laid, the witness not having qualified to

(Deposition of E. C. Wilson.)

answer the question, and let it be noted on the record that the witness before answering this question apparently refers to some memorandum or record, and we demand that the said memorandum or record be produced, and that due foundation be laid as to this witness' knowledge thereof.

A. The first reamer sold to them was charged to their account December 2, 1913.

Mr. LYON.—We move to strike the answer from the record and exclude it from consideration on each of the grounds stated in the preceding question.

A. Mr. Lyon desired to have the testimony extremely accurate, so I put the exact date in the record. He is very particular in some instances.

Q. 422. (By Mr. BLAKESLEE.) Prior to the date of the sale of this reamer to this company, do you know whether or not this company had used one or more Double reamers produced by the defendant in this case?

Mr. LYON.—Objected to as leading.

A. Yes, sir; they had.

Q. 423. (By Mr. BLAKESLEE.) And where?

A. In practically every field in the State of California and possibly a good many foreign fields. That is, fields outside of this State.

Q. 424. Can you state why the Union Oil Company purchased Wilson reamers from you or your company after using the Double reamers furnished by the Union Tool Company, the defendant herein?

[408]

Mr. LYON.—Objected to as incompetent, no foun-

(Deposition of E. C. Wilson.)

dation laid, the witness not having qualified to answer the question, and as leading.

A. Yes, sir.

Q. 425. (By Mr. BLAKESLEE.) Please so state.

Mr. LYON.—The same objection.

A. I believe the first reamer we sold to the Union Oil Company was for use in a well they were

I. B. drilling

~~digging~~ in the Fullerton field. Mr. Pickering was their foreman; and the formation was very hard, they had broken several Double underreamers, had broken the cutters of the Double underreamers, and altogether it had a very serious experience. They were practically in despair when it was urged, I believe by Mr. Pickering, that they at least give the Wilson underreamer a trial. He met with considerable objections, so we learned, and finally his request prevailed, and they purchased a 4½ 15-pound Wilson underreamer, the number of which is 832. The Wilson reamer was used successfully. Since that time they have been using Wilson underreamers and buying them of us regularly.

Mr. LYON.—We move to strike each part and parcel of the answer from the record and exclude it from consideration upon the grounds stated in the objection to the question, and note upon the record in giving this answer the witness has referred to some unidentified record or memorandum, no foundation for which has been laid.

Q. 426. (By Mr. BLAKESLEE.) Are you able

(Deposition of E. C. Wilson.)

to produce at this time any underreamer other than those in evidence, provided with cutters having lateral extensions or shoulders, and not produced by yourself or the Wilson & Willard Manufacturing Company, your Company?

Mr. LYON.—Objected to as leading and as incompetent, calling for a conclusion of the witness, no foundation laid. [409] A. Yes, sir.

Q. 427. (By Mr. BLAKESLEE.) Is that on the premises at this time?

A. I believe it is.

Q. 428. Please produce the same.

A. I think there are two reamers down there.

Q. 429. Have they come up here, if you know?

A. One of them is here. That will show that same construction.

Q. 430. Where is it?

A. I believe it is out in the adjoining room.

(By consent of counsel an adjournment is now taken until 2 o'clock P. M. of this day.)

Office of Raymond Ives Blakeslee, California
Building.

Los Angeles, Cal., December 17, 1914.

2 o'clock P. M.

(Met pursuant to adjournment at 2 o'clock P. M.)

Present: RAYMOND IVES BLAKESLEE, Esq.,
on Behalf of Complainant;

FREDERICK S. LYON, Esq., for De-
fendant.

Proceedings are resumed, and the further direct examination of the witness E. C. Wilson is resumed.

(Deposition of E. C. Wilson.)

(By Mr. BLAKESLEE.)

Q. 431. You have referred to certain sales made to parties and concerns of Wilson underreamers, which concerns had previously used, to your knowledge, Double underreamers. Referring to such memoranda as you may have, please state a little more specifically certain instances of such sales, naming [410] times and purchasers, and state what memoranda you are referring to.

A. By referring to the Wilson & Willard Manufacturing Company's ledger wherein appears the account of the Union Oil Company, I find that I.B. on February 2, 1914, we sold /them/ one reamer; on February 10, of the same year, we sold another; we sold cutters during the month of March; we sold cutters during the month of April. On May 21, 1914, we sold another underreamer to them. These are 4½" and 6¼" reamers. In June we sold some 6¼" cutters and some 4½" cutters. In August, 1914, we sold cutters; in October, 1914, we sold them some safety bolts, and we remachined one of the reamers and also remachined one of the reamers in November.

To the California Oil Fields, Limited, we sold some underreamers through the J. F. Lucie Supply Company. They bought extra cutters for those reamers during the year 1913, in the months of July and August; and in January, 1914, they bought extra cutters, and also in March, and also in April. In July, 1914, we sold them two Wilson underreamers, and a lot of extra cutters for the same; and we sold

(Deposition of E. C. Wilson.)

them extra cutters during the months of September, October, November and December, showing the use of those reamers right along during those months.

The Brea Canyon Oil Company bought the first Wilson underreamer in December, 1913. They bought another one in January, 1914.

The Columbia Oil Producing Company purchased a reamer of us in September, 1914. That is the first reamer we sold them. We also sold them another reamer in October of 1914. Those reamers are in use. We sold them a set of cutters the other day. We have sold reamers for foreign use through various supply houses, through the Oil Well Supply Company and the Oil Well Engineering Company, J. F. Lucie Company. We sold to the Oil Well Engineering Company a considerable quantity of underreamers [411] which have been delivered every month of the year 1914.

The Oil Well Supply Company, we sold reamers through them during every month of this year. We sold them through those companies, and they go to different companies, and it is hard to tell where they go. There are a considerable quantity used in California.

The Oil Well Engineering Company sells to various firms in foreign fields. One of the largest firms, the Burmah Oil Company of India, had purchased several lots of underreamers of us and then through the efforts of a man by the name of Thomas Hayes, they purchased a quantity of Double underreamers; and on that occasion they placed no orders with us

(Deposition of E. C. Wilson.)

for Wilson underreamers. Since that time we have sold them lots of Wilson underreamers, and we have information that the Double underreamers are not being purchased by that Company. Apparently one trial of them satisfied them that the Wilson underreamer was the best.

Mr. LYON.—We move to strike each part and parcel of the foregoing answer from the record and exclude it from consideration on the ground that it is incompetent and not the best evidence, and hear-say.

Q. 432. (By Mr. BLAKESLEE.) In what name are Wilson underreamers sold or billed?

A. They are billed as Wilson underreamers.

Q. 433. And in billing the same who appears as the vendor or seller?

A. The Wilson & Willard Manufacturing Company.

Q. 434. What is your relation to that company?

A. President.

Q. 435. How long have you been president of that company?

A. Ever since its organization in 1907, I believe.

Q. 436. I hand you a batch of papers and ask you if you know anything about them. [412]

A. Yes, sir.

Q. 437. What do you know about them?

Mr. LYON.—Objected to as incompetent, irrelevant, immaterial, the same being apparently letters from other parties not connected with the defendant company, and in the statements contained in any

(Deposition of E. C. Wilson.)

such letters are material or competent, they should be proved by the parties making the same. The letters clearly are incompetent, and the witness is clearly incompetent to make any statement in regard to such letters.

A. These are letters that have been addressed to me in regard to the merits of the Wilson underreamer.

Q. 438. (By Mr. BLAKESLEE.) By whom were those letters received, if you know?

A. By the Wilson & Willard Manufacturing Company.

Q. 439. Have you had other correspondence with the persons purporting to have written these letters?

Mr. LYON.—Objected to as leading.

A. Yes, sir.

Q. 440. (By Mr. BLAKESLEE.) Have you sold any of such parties Wilson underreamers?

Mr. LYON.—The same objection.

A. Yes, sir.

Q. 441. (By Mr. BLAKESLEE.) How many of such parties?

A. All of them. Either to them or to the companies they represent.

Mr. BLAKESLEE.—We offer in evidence as a group all the letters just referred to by the witness as “Complainant’s Exhibit Wilson Reamer Written Testimonials.”

Mr. LYON.—Objected to as incompetent, no foundation laid, and as irrelevant, immaterial and inadmissible, and incompetent for any purpose in the

(Deposition of E. C. Wilson.)

case. If it is desired to prove any such opinions of the parties purporting to have written such letters, the testimony of such parties is required, and clearly [413] any letter is not the best evidence, and is not a statement made under oath, and the defendant insists upon his right to cross-examine any of the alleged makers of such statement.

(The said letters so offered in evidence are fastened together by a metallic clip and are marked as one exhibit in the manner requested by counsel offering the same, together with the title of the court and cause and the date upon which the said exhibit was offered.)

Q. 442. (By Mr. BLAKESLEE.) There is before us on the floor of this room a device which I will now point out and ask you if you have ever seen it before. A. Yes, sir; I have.

Q. 443. When did you first see it?

A. Yesterday; December 16.

Q. 444. How did you come to see it at that time?

A. It was in the shop of the Wilson & Willard Manufacturing Company and was brought

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there on order from the Fay-Pike Company, having been ordered of that company by myself on behalf of the Wilson & Willard Manufacturing Company.

Q. 445. Do you know where it came from?

A. Yes, sir; it came from Coalinga, California.

Q. 446. Will you please compare the same with

(Deposition of E. C. Wilson.)

“Complainant’s Exhibit Wilson Reamer?”

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A. It ~~was~~ a 4½” 15-pound underreamer; that is, an underreamer for 4½” 15-pound casing. It is similar in size to the 4¼” Wilson Exhibit Wilson underreamer. The body of this reamer is of a single forging, and it has no middle joint in it as the previous underreamers of the Double underreamer type had. It has the usual square for the wrenches, and the usual pin or joint by means of which the threaded pin is attached to the tool. The body is provided with a spreading bearing, which bearing projects downwardly below the lower end of the dovetails and upon [414] which spreading bearing the cutters ride when in expanded position. In this respect the reamers are like the Wilson reamer. The reamer is also provided with a safety bolt at its lower end, which bolt is inserted in holes drilled in the spreading bearings referred to, which bearings project downwardly at the extreme lower end of the reamer body. In this regard this reamer is exactly the same as the Wilson underreamer. The reamer is also provided with a slot which extends through the reamer body and just above the dovetailed ways or mouth of the reamer. In this slot is inserted a key, which key extends through a slotted tee, and upon this key the spring rests, and by which key the tee, spring and cutters are all held in position in the reamer body. In this regard they are identically the same as that of the Wilson underreamer. This mortise or hole in the safety bolt at the lower end is just

(Deposition of E. C. Wilson.)

the right size to fit the tools for the Wilson underreamer. This wrench which has been manufactured by the Wilson & Willard Manufacturing Company and which belongs to the Wilson reamer has just been used by myself to remove the safety bolt at the bottom of the reamer I am now describing. This safety bolt has holes drilled into the head of the bolt and extending into the mortised square, which square is for the purpose of admitting the wrench, and these holes referred to are for the purpose of inserting a cotter pin or key to prevent the safety bolt unscrewing and being lost in the operation. The underreamer body has a groove cut in at the side and opening into the hole of the safety bolt for the purpose of making it possible to insert such key or cotter pin into the bolt. This construction is exactly the same as has already been used by the Wilson underreamer. The nut into which the threaded bolt screws or is screwed into, is set into the reamer body and held in position in exactly the same manner as the nut is held in place in the Wilson underreamer, showing that the construction is the same. To take the reamer apart, in other words, [415] to remove the cutters, key, and tee, and spring, you have first to remove the safety bolt as in the Wilson underreamer, then pry the key up at one end and drive it out at the other, and the cutters, tee and spring can all then be removed from the mouth of the reamer body. The body stripped has exactly the same features as that of the Wilson underreamer; it is a forked mouth underreamer, made of a single forging; the fork ter-

(Deposition of E. C. Wilson.)

minates in two prongs; the inner faces of the two prongs are divided into dovetail ways for the cutters, and the ends of these prongs are divided into downwardly projecting wedges or spreading bearings, upon which the cutters ride and over which they ride when being expanded into position. The only difference between this reamer and the Wilson underreamer is the shape of the dovetail ways, the dovetails being slightly different, the same being tapered, whereas those in the Wilson underreamer body are straight and parallel. The dovetailed ways of the Double are formed by planed grooves in the inner faces of the prongs of the reamer body. The dovetailed ways of the Wilson underreamer are formed by milling the material out between the two shoulders, leaving an open way between the two dovetails on the opposite sides of the reamer body. The cutters of the reamer being described, differ from those in the Wilson only that they have V-shaped grooves planed across the back of the cutter, and in that regard are just the same as the Double improved underreamer cutter, and instead of having holes mortised in the back of the shank to admit the tee, has shoulders or projections which project inwardly and upon which projections the cutters ride when being in suspension on the tee. The tee is of a single forging, having a slot through which the key extends and having a spring or, as in this case, having two springs, both of which were made for Wilson underreamers and were sold to the Union Oil Company, evidently to be used in this reamer. These springs are iden-

(Deposition of E. C. Wilson.)

tically the same as a sample spring we have brought up to this room, which springs we use regularly in the [416] Wilson underreamer.

Q. 447. Please compare or contrast the lower extensions of the prongs of this reamer with the lower extensions or lugs of the prongs of the reamer "Complainant's Exhibit Wilson Reamer," as to shape.

A. They are shorter than those of the Wilson underreamer, and the bearing faces upon which the cutters ride when in reaming position are not tapering as are those bearings on the Wilson underreamer. That is about the only difference. The construction is identically the same otherwise.

Q. 448. How do the cutters of this reamer compare in general with the cutters of "Complainant's Exhibit Improved Double Reamer and Cutters"?

A. They are the same. The chief difference is the absence of the slot in the cutters of the reamer which I am now describing—the slot in the shank of the cutter in which the demountable or detachable key of the Double underreamer of former type is inserted. A shoulder or projection at the back of the shank of the cutter that I am now describing, and on the upper end of the shank, rides on the tee,

I.B. ~~and~~ instead of the tee being inserted in the holes or mortises in the cutter itself. The back of the cutter otherwise is practically the same, with the exception that it has no vertical groove planed lengthwise on the back of the body of the cutter. This reamer seems to have been made from the drawing which was supplied by W. W. Wilson in a

(Deposition of E. C. Wilson.)

part of his examination in the former case.

Mr. LYON.—We move to strike the last sentence of the answer from the record and exclude it from consideration upon the ground that it is incompetent, not the best evidence, a mere conclusion of the witness and not responsive to the question.

Mr. BLAKESLEE.—We offer in evidence the reamer just taken apart and discussed by the witness in response to the last question as “Complainant’s Exhibit Reamer Type F.” [417]

Mr. LYON.—Objected to as incompetent, no foundation laid, irrelevant and immaterial to the case.

(The said reamer so offered in evidence is marked as requested, together with the title of the court and cause and the date upon which the same was offered.)

Q. 449. (By Mr. BLAKESLEE.) Have you any further comparison to make with respect to this exhibit just offered, and plaintiff’s exhibit Wilson reamer?

A. The key which extends through the slot of the reamer body and through the slot in the tee and upon which the spring rides is exactly the same in general form and construction as that of the Wilson

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underreamer, and ~~has~~ the key which is the subject of other litigation.

Q. 450. Is there any patent in existence, if you know, purporting to claim and cover a reamer including such key? A. Yes, sir.

(Deposition of E. C. Wilson.)

Q. 451. Do you know to whom such patent was issued?

A. Robert E. Bole, and a one-half interest was assigned to Mr. Edward Double, who is president of the Union Tool Company, at which shop this reamer was manufactured.

Mr. LYON.—We move to strike the last portion of the answer from the record and exclude it from consideration upon the ground that it is incompetent and no foundation laid and hearsay, and the motion is directed to—

Mr. BLAKESLEE.—Strike that out—that about whose shop it was manufactured at. That can be stricken out.

Q. 452. Have you ever filed any application for patent pertinent to such key?

Mr. LYON.—Objected to as leading, incompetent, and not the best evidence, no foundation laid for the introduction of secondary evidence.

A. I have. [418]

Q. 453. (By Mr. BLAKESLEE.) What is the status of that application?

A. We declared an interference against the party Bole and Edward Double, and the case is now pending.

Q. 454. As far as your knowledge goes, who furnished you with such key in an underreamer?

A. I did.

Q. 455. Was it or was it not with the knowledge of Mr. Boles?

(Deposition of E. C. Wilson.)

Mr. LYON.—Objected to as leading, irrelevant and immaterial.

A. It was with his knowledge. He was in our shops at the time I devised that key.

Mr. LYON.—We move to strike the last portion of the answer from the record and exclude it from consideration of on the ground that it is volunteer and not responsive to the question. This motion is addressed to all that portion of the answer following the words “he was.”

Q. 456. (By Mr. BLAKESLEE.) Was or was not that key used in an underreamer prior to the time that either you or Mr. Bole filed the applications referred to?

Mr. LYON.—Objected to as incompetent and not the best evidence, no foundation laid to the introduction of secondary evidence, and as leading.

A. Yes, sir; it was.

Q. 457. (By Mr. BLAKESLEE.) By whom?

A. By myself.

Q. 458. Was that or was it not with the knowledge of Mr. Bole?

Mr. LYON.—Objected to as leading.

A. It was with his knowledge.

Q. 459. (By Mr. BLAKESLEE.) Did you at any time prior to the filing of either of said applications have any conversation [419] with Mr. Bole pertinent to the right to use such key in an undereamer?

Mr. LYON.—Objected to as leading and calling for the conclusion of the witness, not the best evi-

(Deposition of E. C. Wilson.)

dence and not the proper method of proof, and as immaterial; and for the further reason that it is not shown that the said Bole is a party in interest to this suit, and any such conversation would not be binding upon or admissible in evidence against the defendant and herein unless it is shown that the said Bole was connected with the Union Tool Company, defendant herein. A. Yes, sir.

Q. 460. (By Mr. BLAKESLEE.) What was said at such time?

Mr. LYON.—The same objection, and that it is incompetent, not the best evidence and inadmissible, it appearing that any such alleged matter was covered by a written contract in writing.

Mr. BLAKESLEE.—There is nothing in this record to make out any such appearance last stated. Counsel is not here to testify.

A. I had been manufacturing Wilson underreamers equipped with that type of key for about a year and a half. No one questioned my right or ever suggested that I did not have an absolute right to that device until Mr. Bole made the demand on me for an accounting and for a royalty on such key, claiming that he was the inventor. I stated to him that he had absolutely no right to the key and that he knew it; that I was the inventor of the key and that any suggestion which he might have made was merely with reference to the manner in which that type of key could be removed from the underreamer body. In settling a disputed account which he owed the Wilson & Willard Manufacturing Company he

(Deposition of E. C. Wilson.)

stated in words something like this: "I see you have made no mention of the underreamer key in this agreement." I told him that the underreamer key was my own invention and that he had no right to it whatever, and that, furthermore, the agreement which was then under consideration was between himself and the [420] Wilson & Willard Manufacturing Company, whereas the key was my own personal affair; that I did not owe him anything in regard to the key, and that the key was my own invention, and anything in regard to the key would be with me personally. I said, "You have no rights to the key." He said, "Well, I will do nothing further with the key. I will drop it. I will give you no trouble in that regard." I said, "Very well," and I turned to my brother W. W. Wilson, who was also present, and said "We will remember this agreement with Mr. Bole."

Q. 461. (By Mr. BLAKESLEE.) There are now also before us here two other devices which I now point out and which were produced here for counsel for defendant. It is my recollection that counsel for defendant has admitted that these devices were made by the defendant herein in the Southern District of California within the last year or thereabouts. I will ask counsel for the defendant if I am correct in such recollection?

Mr. LYON.—The record will speak for itself in that regard. I do not know that I stated anything as to when they had been made. If you refer to the two Union reamers which I produced at your request, it

(Deposition of E. C. Wilson.)

is admitted that they were manufactured in Southern District of California by the defendant Company, and that they were manufactured since the commencement of this suit. I do not believe that the exact date is material, but I will get that for you if you want it.

Mr. BLAKESLEE.—The admission it sufficient.

Q. 462. Mr. Wilson, compare the one of these devices which I now point out with "Complainant's Exhibit Wilson Reamer," with respect to the cutters and the parts of the body with which the cutters directly co-operate.

A. This reamer which you refer to is a Double underreamer and was one somewhat similar to the Double underreamer old stlye. It had no downward projection or extension of the [421] reamer body which formed a spreading bearing of the cutters, the spreading bearing resting wholly between the dovetails. The cutters rode over this V-shaped lower end of the reamer body, being expanded and contracted, and rode over this V-shaped end under the hollow-slotted extension when being expanded into reaming position. The cutters were attached to the reamer by means of a key which extended through slots or holes drilled in the shanks of the cutters, which key in turn fitted into a hollow in the spring-actuated rod. This key travelled vertically up or down with the cutters when the cutters were drawn down into collapsing position, or when drawn upwardly into the spreading bearings into reaming position. The cutters had the usual form of Double

(Deposition of E. C. Wilson.)

underreamer construction, which construction is also found in reamers of prior makes, namely the V-shaped groove at the back of the cutters to permit the cutters to tilt or collapse over the spreading or wedge-like bearing.

Q. 463. How do the lower ends or portions of these cutters compare with the lower ends or portions of the cutters of "Complainant's Exhibit Wilson Reamer"?

A. The lower ends of the cutters of the Wilson underreamer body have an enlarged or widened body which forms the shoulders on the outer edges of the body, and which shoulders have bearings on their inner faces, and upon which points the cutters ride when in expanded position. There are no such shoulders found on the Double underreamer cutters just described.

Q. 464. With relation to the width of the shank of these cutters, how does the width of the lower end of the cutters compare with the width of the lower end of the cutters of the old style Double reamer cutters, such as "Complainant's Exhibit Old-Style Reamer Cutter No. 1"?

A. They are relative about the same proportion. The cutters are narrower than the cutters of the improved style [422] Double underreamer, and considerably narrower than the cutters of the Wilson underreamer.

Mr. BLAKESLEE.—We offer in evidence the underreamer just discussed by the witness as "Complainant's Exhibit Defendant's Reamer Type C."

(Deposition of E. C. Wilson.)

(The said underreamer so offered in evidence is marked as requested, together with the title of the court and cause and the date upon which the said reamer was offered in evidence.

Q. 465. (By Mr. BLAKESLEE.) Calling your attention now to the other of the two reamers recently admitted as the manufacture of the defendant herein, I will ask you to please compare the same with the "Complainant's Exhibit Wilson Reamer" with respect to the cutters and the parts of the body of the reamer with which the cutters co-operate.

A. This reamer referred to is known as the Double improved type, and is the reamer which has been on the market for several years and is the one in which he first employed the downwardly projecting spreading-bearing formed at the lower end of the body, and which projects downwardly between the cutters. In that regard the construction of that reamer body is very similar to that of the Wilson, the only difference being in the length of this bearing and the angularity of the faces. The cutters are widened at the lower end of the body, which body extends laterally

I.B. beyond the edges

~~within the jaws~~ of the shank, and which extensions form shoulders. These shoulders are provided with bearings at the back, upon which bearings the cutters rest when in remaining position. To that extent these cutters have been made to conform with the construction of the Wilson underreamer cutter.

Q. 466. What do these bearings at the backs of

(Deposition of E. C. Wilson.)

the shoulders of these cutters co-operate with?

A. The spreading-bearing on the reamer body. [423]

Q. 467. Where are those spreading-bearings found on the body?

A. The spreading-bearings are at the extreme lower end of the reamer body and form a part of the hollow-slotted extension.

Q. 468. How far do they extend across the lower end of the body?

A. Clear across the body from periphery to periphery; from one side to the outside on the other.

Q. 469. Where is the hollow-slotted extension located with respect to these bearings in the body?

A. Above those bearings. It forms the extreme lower end of the hollow-slotted extension referred to.

Q. 470. At what parts of such hollow-slotted extension?

A. The extreme lower end. And the bearing also extends laterally beyond the hollow-slotted extension and extends out to a point below the dovetails of the reamer body.

Q. 471. So that the hollow-slotted extension ranges upwardly between these lateral bearings of the body? A. Yes, sir.

Q. 472. How do the cutters and the parts of the body with which they co-operate in this reamer under discussion compare generally with the corresponding parts of "Complainant's Exhibit Improved Double Reamer Body and Cutters"?

(Deposition of E. C. Wilson.)

A. They are the same form of construction; the same type of reamer. Both of these reamers employ an auxiliary thrust-bearing, formed by a V-shaped groove at the bottom of the body, which V-shaped groove was placed there for the purpose of extending the bearings clear across the full width of the body.

Mr. BLAKESLEE.—We offer in evidence the underreamer just discussed by the witness as Complainant's Exhibit Defendant's Reamer Type "D." [424]

(The said reamer so offered in evidence is so marked as requested, together with the title of the court and cause and the date upon which the same was offered in evidence.)

Q. 473. I call your attention to another device lying on the floor and ask you if you know anything about that. A. Yes, sir; I do.

Q. 474. What is it?

A. That is another one of the types of Double underreamer.

Q. 475. Where have you seen that before, and under what circumstances?

A. In the shop of the Wilson & Willard Manufacturing Company. It was purchased by us to be used as an exhibit in this case.

Q. 476. From whom did you purchase it?

A. Fairbanks-Morse, I believe.

Mr. BLAKESLEE.—We ask defendant's counsel if he wishes to concede that this was manufactured by defendant, or put us on our proofs in that respect?

(Deposition of E. C. Wilson.)

Mr. LYON.—I have had no opportunity to examine the particular one that you refer to.

Mr. BLAKESLEE.—It is a matter of saving record, that is all.

Mr. LYON.—The device is too heavy to permit me to dismantle the same.

Mr. BLAKESLEE.—I may say that we are only concerned with the cutters and co-operating parts—

Mr. LYON.—It is the cutters that we cannot get out to look at. Pass the whole of the inquiry, if you want to. I cannot tell you offhand right now, but I think I can do it later.

Q. 477. (By Mr. BLAKESLEE.) Please compare this device, stating what it is, with “Complainant’s Exhibit Wilson Reamer,” [425] with respect to the cutters and co-operating parts of such devices.

Mr. LYON.—Objected to as not the best evidence, incompetent, no foundation laid, the witness not having qualified to answer the question.

A. The cutters of this type of Double underreamer more closely resemble the Wilson underreamer-cutters than do the cutters of the prior type of Double improved underreamer. In this last type they dispense with the bearing at the V-shaped groove at the lower end of the reamer body, and cut out the portion to a rectangle instead of a mere acute angle. This leaves the downward projecting bearing of the reamer body looking more like that of the Wilson underreamer than is the case with the other type of improved Double underreamer. The cutters

(Deposition of E. C. Wilson.)

have extended shoulders with bearings at the backs of them, for the purpose of riding up over the spreading bearings and for the purpose of bracing the cutters against rotating action when in use, and for the purpose of forming a fulcrum or tilting point on the backs of the cutter bodies instead of the shanks, and in that regard they are like the other types of Double improved underreamer and are like the cutters of the Wilson underreamer.

Q. 478. (By Mr. BLAKESLEE.) How do these parts of the reamer last referred to compare generally with the cutters and co-operating parts of "Complainant's Exhibit Improved Double Reamer and Cutters"?

I. B.

LYON.

Mr. ~~BLAKESLEE~~.—The same objection as noted to the preceding question.

A. The general construction is the same as I have previously stated. The downward projection or spreading bearing at the lower end of the reamer body is formed by machining rectangular grooves out of the reamer body, and at the extreme lower end of the dovetails. The cutters are changed in form also, there being [426] no angular bearing at the upper end of the body of the cutter to bear into the V-shaped groove at the lower end of the reamer body, as that bearing is dispensed with. The cutters are spaced apart in the reamer body at that point, just as is the case with the Wilson underreamer. This leaves the entire thrust bearing to be taken up at the extreme upper end of the shanks of the

(Deposition of E. C. Wilson.)

cutters, just as is the case with the Wilson under-reamer. This is a later type of the Double under-reamer than their improved type, and is

I. B. one/which dispenses/with the very bearing on which so much argument was advanced in favor of by Mr. Double's attorney and counsel during the prior taking of testimony in another case. They apparently found that that bearing was a disadvantage, and have dispensed with it, just as we argued was the case.

Mr. LYON.—We move to strike out each part and parcel of the answer from the record and exclude it from consideration as not responsive to the

I. B. ed
question, volunteer/and incompetent.

Mr. BLAKESLEE.—We offer in evidence this last reamer compared by the witness as Complainant's Exhibit Reamer Type "E."

Mr. LYON.—Objected to as incompetent and no foundation laid.

(The said reamer so offered in evidence is marked as requested by counsel, together with the title of the court and cause and the date upon which the same was offered in evidence.)

Mr. BLAKESLEE.—You may cross-examine.

Mr. LYON.—A transcript of the direct examination of the witness's testimony will be required and is demanded under the stipulation before the cross-examination of the witness. [427]

Office of Raymond Ives Blakeslee, California
Building.

Los Angeles, Cal., December 31, 1914,
2 o'clock P. M.

IN EQUITY—No. A-4.

E. C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Mr. BLAKESLEE.—Pursuant to the attached notice and to the adjournments agreed upon, the parties met at the above time and place for the purpose indicated in said notice.

Present: RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant;
FREDERICK S. LYON, Esq., Solicitor
for Defendant.

Mr. LYON.—In this case complainant has offered in evidence a certain reamer as Complainant's Exhibit Reamer Type "F." Certain proofs with regard to such reamer being an infringement of "Complainant's Exhibit Wilson Patent" have been taken in this case. Defendant has given notice on the record that it would insist that the bringing in of such reamer into this suit as an additional infringement, a supplemental bill having been waived by the defendant, brings before the court in this case any cause of action whatever which may exist to complainant Elihu C. Wilson on account of alleged infringement by defendant of "Complainant's Exhibit

Wilson Patent," by the manufacture and sale of reamers like Complainant's Exhibit Reamer Type "F." And counsel for complainant is now requested to state whether he intends to retain in this case the said exhibit and the testimony relating [428] thereto, and, if not, what he does intend to do therewith, before defendant finishes the cross-examination of the witness Wilson.

Mr. BLAKESLEE.—There were a number of procedures open to complainant subsequent to the offering in evidence of Complainant's Exhibit Reamer Type "F." Those proceedings, including the filing of a further bill or a new original bill, were discussed on the record between counsel for both parties at the last session. And original bill has been filed alleging infringement of certain claims of the patent in suit, other than the claims involved in the election charging infringement in this case. It is the present purpose of complainant to move this Honorable Court for an order consolidating the suit thus filed, involving this patent subsequent to the present suit, with the present suit, upon a showing that the issue of such subsequent suit involves the exhibit Complainant's Exhibit Reamer Type "F" in this present or first-brought suit, and in order that, as to such exhibit, the issues of infringement under the patent in suit may be broadened out in the respects of such further bill. We have not attempted to dodge the election made in this case, nor do we intend that the defendant shall dodge the further questions of infringement presented in and by Complainant's Exhibit Reamer Type "F," and for

that reason we have filed the further bill mentioned. So far in this present case there has been a mere comparison of the device Complainant's Exhibit Type "F" with "Complainant's Exhibit Wilson Underreamer." If counsel for defendant prefers to defer the further cross-examination of the party Wilson until after the Court has passed upon the said motion to consolidate, which motion will be based in part, at least, upon the pertinent rule in equity, he may so do. We do not desire that the scope and range of his further cross-examination pertinent to such Complainant's Exhibit Reamer Type "F" be abridged in any manner [429] by any uncertainty which may exist prior to the action of the Court upon such proposed motion. And notice is now given, to be supplemented by further written notice, that such motion will be presented for the consideration of this Court at the opening of that session of this court, commencing at the hour of 10:30 A. M. January 11, 1915, or as soon thereafter as counsel can be heard.

Mr. LYON.—Is it the present position of complainant in this case that the question of infringement by defendant in the manufacture, sale or use of reamers like Complainant's Exhibit Reamer Type "F," is involved in this present suit at the present time?

Mr. BLAKESLEE.—It does not seem that it is necessary to make any further statement concerning these matters until the motion referred to has been disposed of. As stated, Complainant's Exhibit Reamer Type "F" has been merely treated of in a comparison with the structure of the Wilson reamer. So far as the proofs in this case go at the present time,

there has been no other procedure. It may be that upon the ruling of the Court upon said motion all charge of infringement in and by said reamer type F may be decided to be pressed in the further suit in which said motion is brought. So that the defendant, knowing the facts as well as complainant does, is put upon the choice of his course, with the understanding that if he wishes to defer cross-examination of the present witness pertinent to Complainant's Exhibit Reamer Type "F" until after that motion has been passed upon, he may do so.

Mr. LYON.—Necessarily the pertinency and materiality of the reamer Complainant's Exhibit Reamer Type "F," and of the testimony with respect thereto,

must appear from the record and from the

I. B. petition

~~position~~ of complainant with respect thereto before defendant is able to judge as to the necessity of cross-examination. It is necessary, therefore, that complainant's course be completely [430] defined before defendant is able to judge as to the necessity of cross-examination with respect to such Complainant's Exhibit Type "F," and complainant is left to such course as he is advised in this case. With the consent of complainant's counsel, defendant will defer the cross-examination of the party Wilson until the ruling upon such motion and until such course is fully determined.

Mr. BLAKESLEE.—In that connection complainant states that the record shows that defendant's counsel suggested that within his view of the situa-

tion at the last session, one procedure open to the complainant, in view of the election made, was to file another bill charging infringement by Complainant's Exhibit Reamer Type "F" of other claims of the patent in suit. Such suggestion or observation was taken as genuinely and frankly meant, and, after consideration of the stipulation, procedure has been taken on those lines. Equally frankly complainant states that he agrees to the continuance of this case, and the cross-examination of the witness Wilson, until the motion referred to has been passed upon and the Court has ruled upon these matters, when such other procedure will be taken as will then seem proper and as complainant is advised, and defendant will be given due opportunity to further cross-examine the witness Wilson upon the matters of direct examination now untouched upon in connection with further procedure in this case and before completing the *prima facie* record.

Mr. LYON.—Complainant and complainant's counsel must not misconstrue the position of defendant or the statements of defendant's counsel. Defendant's position is that by injecting the question of infringement of reamers like Complainant's Exhibit Reamer Type "F" into this case, and securing a waiver by the defendant of the necessity of filing a supplemental bill, this Court by means of this suit took full jurisdiction to hear, try and determine the issue of infringement and that such issue of infringement [431] was limited to claims 16 and 17. Defendant's statement with regard to filing a separate

bill was merely a suggestion of a course of conduct, and was not an admission on the part of defendant that complainant could split up a cause of action for infringement and place part of it within the jurisdiction of this court for trial in the present suit and thereafter bring another suit for another portion of such claimed cause of action for infringement. In other words, defendant's position is, that having brought the question of infringement by the manufacture, sale or use of reamers like "Complainant's Exhibit Type "F" in this case, complainant is bound thereby, and if this case is prosecuted must be bound by the decree herein as *res adjudicata* of the whole question of infringement, and cannot maintain any further bill with respect thereto.

Mr. BLAKESLEE.—We do not understand that there has been any waiver in any respect by either party in regard to this matter of Complainant's Exhibit Reamer Type "F," nor that there has been any election by complainant other than to fully prosecute any possible charge of infringement in respect to this type of reamer. And, in order that the proof of infringement might be complete, the subsequent bill charging infringement by this type of reamer has been filed, and, in order that, if the court so direct, all of the issues of infringement charged may be tried out in this suit, the motion is made to consolidate the subsequent suit with the present one. Until the court has passed upon this motion and the propriety of this course, no other procedure seems to be open, and for that reason we suggest that further proofs in this case be

stayed until that motion has been passed upon, with the understanding that as to the cross-examination of the present witness entered into, with permission, of course, to defendant at this time, to further cross-examine the present witness if in view of the present situation and the showing of this record, particularly as to-day developed, he wishes so to do. [432]

Mr. LYON.—In view of the stipulation, and to enable complainant to present the motion referred to, or any other motion, or to take any other procedure in this case which he is advised to take with reference to this question of alleged infringement by reamers like Complainant's Exhibit Type "F," defendant agrees to the suspending of these proceedings and to the stipulation in regard to the further cross-examination of the witness Wilson.

(By consent of both parties an adjournment is now taken until January 12, 1915, at 10 o'clock A. M., at this same place.)

United States of America,
State of California,
County of Los Angeles,—ss.

I, I. Benjamin, Notary Public in and for Los Angeles County, duly sworn and qualified to act as such, do hereby certify that the foregoing is a full, true and correct transcript of the testimony and proceedings taken and had in the taking of depositions in the cause therein entitled, so far as the said depositions and proceedings relate to the examination of the party E. C. Wilson, together with all questions as given, answers made, objections, motions, and notices

of motions made upon the record in said cause at the taking of the deposition of the said E. C. Wilson before me in said cause on the 17th day of December, 1914, and upon the 31st day of December, 1914.

I FURTHER CERTIFY that this certification is made at the request of solicitor for complainant.

IN TESTIMONY WHEREOF I have hereunto set my hand and affix my official seal this 8th day of January, 1915.

[Seal]

I. BENJAMIN,
Notary Public in and for Los Angeles County, State
of California. [433]

[Endorsed]: A-4—Eqty. United States District Court, Southern District of California, Southern Division. Elihu C. Wilson, complainant, vs. Union Tool Company, Defendant. In Equity, No. A-4. Proofs Taken on Behalf of Complainant on December 17th and 31st, 1914. Filed Jan. 9, 1915. Wm. M. Van Dyke, Clerk. By R. S. Zimmerman, Deputy Clerk. [434]

In the United States District Court, Southern District of California, Southern Division.

IN EQUITY—No. A-4.

E. C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendants.

Proceedings Had February 16, 1915.

This being the time and place, to wit, February 2, 1915, at the office of Raymond Ives Blakeslee, to which the further taking of depositions in the above-entitled cause was continued, an adjournment is now taken until Tuesday, February 9, 1915, at this same place and at the hour of 10 o'clock A. M.

On this February 9th, 1915, at the hour of 10 o'clock A. M., the same being the time to which the further taking of testimony in the above-entitled cause was continued, a further continuance is now taken until Tuesday, February 16, 1915.

Office of Raymond Ives Blakeslee, California
Building,

Los Angeles, Cal., February 16, 1915,
10 o'clock A. M.

This being the time and place to which the further taking of testimony in the within entitled cause, to wit, E. C. Wlson, complainant, vs. Union Tool Company, defendant, (In Equity—No. A-4), was continued, the following proceedings were had.

Mr. BLAKESLEE.—Met at the office of Raymond Ives [435] Blakeslee, counsel for complainant pursuant to the several adjournments hereinbefore noted, at the hour of 10 o'clock A. M. the motion referred to in the proceedings of December 31, 1914, namely, to consolidate with the cause of action herein the cause of action in equity suit No. B-62, pending between the same parties in this same court, having come on for hearing and having been decided in favor

of complainant on argument in open court on the 15th day of February, 1915, and the motion of defendant to dismiss the said bill of complainant in said equity suit B-62 having been denied,—Present: Raymond Ives Blakeslee, Esq., solicitor and counsel for complainant, and the complainant E. C. Wilson.

The hour of 10:15 o'clock A. M. having arrived and no appearance having been made for the defendant, and the office of counsel for defendant over the 'phone having stated that counsel for defendant was not at his office and had not been there on this day, the following proceedings were had on behalf of complainant.

The present proceedings being taken are pursuant to the adjournment above noted and to the agreement reached in court between counsel yesterday that the proofs would continue without awaiting the filing by the defendant of such answer as it may be advised to file to the bill of complaint in said cause in equity No. B-62, consolidated as above noted by the order of the court with this cause of action, such proceedings on such motion to consolidate being taken in view of the election by the complainant to stand upon claims 16 and 17 of the claims of the Wilson patent in suit, the complainant again offers in evidence the underreamer marked Complainant's Exhibit Reamer Type 'F,' as Complainant's Exhibit Defendant's Reamer Type 'F' under Pleadings in Equity Suit No. B-62 heretofore consolidated by order of the court with the above-entitled cause, and requests that the notary so mark the exhibit. [436]

(The said exhibit is marked as above requested.)

(Deposition of E. C. Wilson.)

The proceedings here were halted until the hour of 10:55 A. M. in order to give counsel for defendant an opportunity to appear.)

Mr. BLAKESLEE.—We have waited further until the hour of 10:55 A. M., to give counsel for defendant an opportunity to appear, but have not heard from him nor has he appeared. This is the time and place at which counsel for defendant was to have appeared to complete the cross-examination of the party witness Wilson who was here and ready to be so further cross-examined. The offer is now made to the defendant to so cross-examine the party witness Wilson, and as defendant is not represented to accept such offer we shall consider the cross-examination of the present witness completed, with waiver as to any right to further cross-examine the witness party Wilson on the record to date, and do now recall the party witness for further examination.

**Deposition of E. C. Wilson, Recalled in His Own
Behalf.**

E. C. WILSON, recalled for further direct examination, in response to interrogatories propounded to him by Mr. Blakeslee, testified as follows:

Direct Examination.

(By Mr. BLAKESLEE.)

Q. 479. In numerous places in your examination references have been made to the Wilson underreamer as manufactured and sold by the Wilson & Willard Manufacturing Company of Los Angeles, California, of which you are president. Is there any other underreamer, to your knowledge, made and sold

(Deposition of E. C. Wilson.)

and known as the Wilson underreamer? That is, any other underreamer than that made by said company? A. There is not.

Q. 480. What are the facts in this respect with relation to the past? [437]

A. The same holds good for the past excepting as to reamers made for me by the Baker Iron Works and the Bakersfield Iron Works before the year 1908.

Q. 481. Referring now to Complainant's Exhibit Reamer Type "F," will you please state, judging from your experience in connection with underreamers and the manufacture, sale and use thereof, whether this underreamer could or could not be operated with the detachable portion at the lower end thereof removed.

A. It could not be operated just the same as the Wilson underreamer can be operated without the safety bolt.

Q. 482. What would be the effect of the removal of such portion with respect to the expansion and contraction of the cutters?

A. The cutters would expand and contract in just the same manner, for the reason that the shoulders of the cutters, namely, those portions which extend at right angles to the shanks of the cutters extend out far enough to ride upon the two prongs of the body and which bearing is sufficient to expand the cutters or to permit them to contract over said bearings.

Q. 483. Then what do you take it to be the mechanical object of the provision of these detachable features in this reamer?

(Deposition of E. C. Wilson.)

A. The object of the bolt is to form a safety device or precautionary measure against the loss of cutters should this tee upon which the cutters are attached break in use. And it has the additional purpose of preventing the spreading of the prongs if used under abnormal conditions. The block is held in place by this bolt and the purpose of the block is merely an effort on the part of the so-called inventors to evade the Wilson patent.

Q. 484. Do you consider that the provision of this block introduces any feature which differentiates the reamer from the reamer of the Wilson patent in suit in construction and operation? [438]

A. I think not. I am convinced that the block will add nothing whatever to the utility of the tool, and I am convinced that very slight use of the tool would soon burr the hole in the block, or to so burr the bolt itself as to make it practically impossible to replace the block when it had once been removed. The net result would be that an operator would simply dispense with the use of the block and use only the safety bolt, and as the reamer, as I previously testified, could be used without the block.

Q. 485. You have previously referred to a part of the Double underreamer, or the body of the same, such as is exemplified in "Complainant's Exhibit Double Reamer and Cutters," as "a hollow-slotted extension," being that portion of the body at the lower end thereof, in connection with which the cutters execute expanding and contracting action. Do you find in such hollow-slotted extension in this

(Deposition of E. C. Wilson.)

reamer known as Complainant's Exhibit Reamer Type "F" and "Complainant's Exhibit Defendant's Reamer Type 'F' under pleadings in equity suit No. B-62," etc.?

A. There is no such hollow-slotted extension in that type of reamer.

Q. 486. Is there in this type of reamer, at the lower end thereof, or is there not, a slot in addition to a hollow? A. No, sir.

Q. 487. How would you define the part of the block through which the bottom bolt passes? That is, the detachable block?

A. It is merely a piece of metal so constructed as to fit into the bore or opening between the forks and having opposite faces which, when the block is in place, are flush with these bearing faces and spreading-bearing faces of the prongs of the reamer body. The block has a hole drilled through from side to side through which hole the safety bolt extends and by which [439] means the block is held in place in the body between the prongs.

Q. 488. Can or cannot that hole in such block be properly defined as a hollow and a slot?

A. It certainly cannot.

Mr. BLAKESLEE.—Defendant not being represented as yet, it is assumed that the cross-examination of the witness party Wilson is waived. This closes the deposition of E. C. Wilson.

**Deposition of W. W. Wilson, for Complainant
(Recalled).**

W. W. WILSON, being recalled for further direct examination on behalf of complainant, testified as follows, in answer to questions put by Mr. Raymond Ives Blakeslee:

Direct Examination.

(By Mr. BLAKESLEE.)

Q. 230. You are the same W. W. Wilson who previously testified for complainant in this case?

A. Yes, sir.

Q. 231. In your previous testimony in this case reference has been made from time to time to the reamer known as the "Wilson Underreamer."

Please state, if you know, by whom such underreamer is now manufactured.

A. This underreamer is now manufactured by the Wilson & Willard Manufacturing Company.

Q. 232. And by whom is it sold?

A. And sold by the Wilson & Willard Manufacturing Company.

Q. 233. That company is located where?

A. In the city of Los Angeles, county of Los Angeles, State of California.

Q. 234. Is there any other Wilson underreamer manufactured and sold, to your knowledge, than the Wilson underreamer made and sold by this company? A. No, sir. [440]

Q. 235. What are the facts with respect to the past in this connection?

(Deposition of W. W. Wilson.)

A. This underreamer has been made by the Bakersfield Iron Works at Bakersfield, California, prior to the commencement of operations of the Wilson & Willard Manufacturing Company; and prior to that one or possibly two Wilson underreamers were manufactured at the Baker Iron Works of Los Angeles, California.

Q. 236. Under whose direction were the Wilson reamers made, namely, those which were manufactured at the last two shops you have mentioned?

A. Under the direction of Mr. E. C. Wilson, the inventor.

Q. 237. The complainant in this case?

A. Yes, sir.

Q. 238. And the business of manufacturing and selling these reamers as carried on by the Wilson & Willard Manufacturing Company is merely a continuation of the business of Mr. Wilson in these respects at said two shops? Is that correct?

A. Yes, sir.

Q. 239. Please now compare Complainant's Exhibit Reamer Type "F," also known as "Complainant's Exhibit Defendant's Reamer Type 'F.' etc." with the Wilson patent in suit, namely, "Complainant's Exhibit Wilson Patent," with respect to the construction, combination, inter-relation and operation of parts and features.

A. The body in both the underreamers, Complainant's Exhibit Defendant's Reamer Type "F" and the underreamer shown in "Complainant's Exhibit Wilson Patent," both consist of a body surmounted

(Deposition of W. W. Wilson.)

by a square and suitable screw-threaded joint for the attachment of a string of tools. The main body is in one single piece in both cases. In this body is a central bore extending up in rather close proximity to the upper portion of the body. In this bore is placed a spring for flexibly supporting the underreamer-cutters. At the lower end of the bore are fork-mouthed [441] extensions, which extensions have on their inner faces grooves or dovetail ways for the retention of the cutters, these co-operating with the dovetails on the shanks of the cutters. At the lower end of the prongs are bearing faces which bear against the inner faces of the cutters on the body of the cutters, and in the "Complainant's Exhibit Defendant's Reamer" this bearing extends somewhat up on the shank of the cutter. On the lower end of the prongs there are suitable holes for the reception of a bolt, which bolt is threaded into one of the prongs after passing through the hole in the other one. This bolt in Complainant's Exhibit Defendant's Reamer Type "F" is also arranged to support a loose or movable block which does not exist in the underreamer described in "Complainant's Exhibit Wilson Patent." This block forms an extension of the bearing faces on the lower ends of the prongs, which bearing faces coact with the cutters when in expanded position. Also, on the lower ends of the prongs on both underreamers are upwardly and outwardly inclined bearing-faces. The angles of this upward and outward inclination of the lowermost bearing-faces on the prongs of "Complainant's Ex-

(Deposition of W. W. Wilson.)

hibit Defendant's Reamer," as near as I can measure it, is identically the same as that shown in the drawings of "Complainant's Exhibit Wilson Patent." These are for the purpose of coacting with the shoulders of the cutters when the cutters are in collapsed position, and the effect of this angle is to regulate the pressure of the cutter against the walls of the casing when passing into and out of the well. The cutters in both cases consist of a body surmounted by a shank with the dovetails on the shank, a shoe-notch on the outer edge of the shank, and suitable tapered bearing-face at the lower end of the shank, which bearing-face is intended to ride against the casing when the cutters are collapsed, and a tapered inclined portion just above the shoe-notch. The body of the cutters consists of a curved exterior portion meeting [442] with two parallel lateral faces. The upper corners of the meetings of these surfaces with the curved surface are curved or rounded as shown at 16 in the drawing. The inside portion of the body is cut out or relieved of the upper curved portion, below which is a straight portion or plane surface at right angles to the lateral planes of the cutter body. Above this in both cases is a plane face 4³ in the drawing, which forms bearing-faces on the outward extensions or shoulders of the body of the cutter beyond the shank in both cases. The upper end of the shank of the cutter shows in "Complainant's Exhibit Wilson Patent" as a slot 18, against which the prong or extension 5 of the cross 5', or, as we now call it, the tee bar of the under-

(Deposition of W. W. Wilson.)

reamer bears. In the Defendant's Exhibit Defendant's Reamer Type "F" the cutter has near the upper end of the shank a square lug projecting inwardly, with a shoulder which bears against a projection on the lower end of the tee bar or cross. At the upper end of the tee bar or cross in both cases are suitable threads for the reception of the nut 19 in the drawing; also a hole for a cotterpin 20, and the cotterpin 20 for the supporting of the upper end of the spring 6. The lower end of the spring 6 in "Complainant's Exhibit Wilson Patent" is supported upon a block 7 which, in turn, is supported by pins 8 which rest against holes in the body. In Complainant's Exhibit Defendant's Reamer Type "F," the lower end of the spring bears against a key, the lower edge of the key resting against holes or slots in the sides of the underreamer body. The key in this case has suitable downward projections for retaining the same in the body and passes through an enlarged slot in the tee bar. In "Complainant's Exhibit Wilson Patent" the block consists of a cylindrical piece with suitable reception notches at the sides of the pins 8, the lower portion of the block extending down and forming a thrust-bearing between the upper ends of the cutter-shanks. In "Complainant's Exhibit Defendant's Reamer" there are ([443] shoulders on the inside of the prongs which form a slight bearing at the upper end of the shank of the cutter to prevent the inward displacement of the shanks. However, the main portion of this is supported by the pressure of the lug at the inward

(Deposition of W. W. Wilson.)

and upward end of the cutter-shank against the lower end of the tee bar. The dovetail ways 4² on the cutters of "Complainant's Exhibit Wilson Patent" engage in the body with shoulders 2", which shoulders are parallel to the axis of the underreamer body. In Complainant's Exhibit Defendant's Reamer Type "F" the shoulders on the shank of the cutter bear against upwardly and inwardly inclined dovetailed ways on the insides of the prongs of the underreamer body. The bearing-faces 9 at the lower ends of the prongs on the underreamer shown in "Complainant's Exhibit Wilson Patent" are inclined upwardly and outwardly, while those shown on Complainant's Exhibit Reamer Type "F" are parallel. On the shank of the cutter of Complainant's Exhibit Defendant's Reamer Type "F," at the lower end of the shank where the same joins the body of the cutter, and outside of the dovetailed ways on the shank, are auxiliary dovetail ways which extend upwardly for a distance of about one inch in this exhibit. These dovetailed ways do not appear on the cutters of "Complainant's Exhibit Wilson Patent Drawings." On the back of the shank of the cutter or inside of the same is a notch with a short downwardly and inwardly inclined plane at its lower edge, and its upward edge is an inwardly inclined plane which is cut in the back of this cutter for the purpose of preventing it collapsing over the inserted block which rests on the bottom bolt and also upon the slight inward shoulders on the lower ends of the prongs. No such notching appears on "Complain-

(Deposition of E. C. Wilson.)

ant's Exhibit Wilson Patent Cutters."

Q. 240. Now, what is the function of the detachable block held in place by the detachable bottom bolt in Complainant's Exhibit Defendant's Reamer Type "F"? [444]

A. This block is for the purpose of forming an extension of the bearing-faces at the lower ends of the prongs in the underreamer body.

Q. 241. Please state what effect upon the method of use and operation of this reamer will be produced by the removal of said detachable block.

A. None whatever. The underreamer will be as operative without the block as it is with it.

Q. 242. What is the purpose of the provision of this block by the manufacturers of this underreamer, as you make out?

A. It is undoubtedly for the purpose of differentiating this underreamer from the Wilson underreamer by attempting to make the bearing surfaces on the lower ends of the prongs of the underreamer continuous, while in the case of the Wilson underreamer they are separate and distinct. The block can be placed in position only with difficulty, and after the lower end of the underreamer body is worn by repeated contact with the stone and drillings in the bottom of the hole, it would probably be very difficult to extract the block from the lower end of the reamer body and would likely be next to impossible for the drillers in the field to replace the same after it has once been extracted.

Q. 243. In your previous testimony in this case

(Deposition of W. W. Wilson.)

reference has been made to that portion of the Double underreamer or the underreamer of the Union Tool Company, defendant herein, namely, at the lower portion of the body of such reamer, as the hollow-slotted extension, such as is shown in "Complainant's Exhibit Improved Double Reamer and Cutters." Do you find any such hollow-slotted extension in Complainant's Exhibit Defendant's Reamer Type "F"?

A. No, sir. [445]

Q. 244. Do you or do you not find in the detachable block at the lower end of the body of this last-named reamer, Type F, both a hollow and a slot?

A. No, sir.

Q. 245. What do you find there?

A. Simply a horizontal hole through the block.

Q. 246. Does the tee bar or spring-actuated rod, or any part thereof, play through this detachable block, or does it not?

A. No, sir. Probably the lowest limit of the spring-actuated rod may butt against the block. This action is similar to that taken in the old hollow-slotted extension reamer by the key butting against the lower end of the slots in the hollow-slotted extension.

Q. 247. Which keys do you refer to?

A. The loosely mounted key passing through the spring-actuated rod of the reamer, "Complainant's Exhibit Double Improved Reamer and Cutters," like that used in this type of reamer.

Q. 248. And what is the function of that key?

A. The key was to support and attach the cutters

(Deposition of W. W. Wilson.)

to the spring-actuated rod.

Q. 249. Now, referring to the key in Complainant's Exhibit Defendant's Reamer Type "F," which you have located as being held in holes or openings in the body and passing through a slot in the spring-actuated rod, have you ever seen any such key in any other type of underreamer for taking the pressure at the lower end of the spring surrounding the spring-actuated rod? A. Yes, sir.

Q. 250. In what other type of underreamer?

A. In the Wilson underreamers as manufactured by the Wilson & Willard Manufacturing Company. [446]

Q. 251. For how long a period of time?

A. Since the spring of 1911.

Q. 252. When did you first see such a key embodied in the construction of a reamer known by you to have been manufactured by the defendant Union Tool Company?

A. In this Exhibit Complainant's Exhibit Defendant's Reamer Type "F" when it was brought into the shop of the Wilson & Willard Manufacturing Company about three months ago.

Q. 253. Do you know whether any letters patent of the United States have issued for an underreamer disclosing and claiming such a key in combination with the other parts and features?

A. Yes, sir. I have seen the patent drawings in the Patent Gazette, and also copies of the patent as forwarded from the Patent Office and issued to Rob-

(Deposition of W. W. Wilson.)

ert E. Bole for such a key device as applied to an underreamer.

Q. 254. Do you know this Robert E. Bole?

A. Yes, sir.

Q. 255. How long have you known him?

A. Since 1906 or seven.

Q. 256. Did you, or did you not, meet him frequently during the period of time since then?

A. Since the fall of 1908 until April of 1912 I met him quite frequently at the shop of the Wilson & Willard Manufacturing Company, where in the early part of that period he was employed as a machinist, and later on, when he was connected with the Bole Pump Company, in which Mr. Willard was interested, and for which the Wilson & Willard Manufacturing Company built the Bole oil well pumps.

Q. 257. Has said Robert E. Bole any business relations at the present time with the Wilson & Willard Manufacturing Company? [447] A. No, sir.

Q. 258. When did he sever those relations?

A. Arrangements were made by a settlement on February 1, 1913, and later on our business relations were severed about April, 1913, the Bole pump business at that time being moved away from the Wilson & Willard Manufacturing Company's shop.

Q. 259. Who, if you know, first devised such a key as that patented by said Robert E. Bole and shown in "Complainant's Exhibit Defendant's Reamer Type F"? A. Mr. E. C. Wilson.

Q. 260. From whom, if you know, did said Bole obtain his knowledge of said key?

(Deposition of W. W. Wilson.)

A. Directly or indirectly from Mr. E. C. Wilson.

Q. 261. Do you know whether any person other than said Robert E. Bole holds any interest in such Bole patent covering such key?

A. If I remember correctly, a one-half interest in that patent is assigned to Mr. Edward Double, president of the Union Tool Company of Torrance, California.

Q. 262. That is, the company defendant in this case? A. Yes, sir.

Q. 263. Did said Bole ever make any contention to your knowledge that he had any interest whatsoever in any invention attaching to such key prior to the time he severed his relations with the Wilson & Willard Manufacturing Company?

A. No, sir. In the frequent conversations had between Mr. Bole and myself between the time the key was gotten up by Mr. E. C. Wilson and the time that relations were severed with Mr. Bole, reference has frequently been made by myself to the invention of this key by Mr. E. C. Wilson, and no statement to the contrary was ever made by Mr. Bole. [448]

Q. 264. At the time of the settlement you referred to as between the Wilson & Willard Manufacturing Company and said Bole, about the first of February, 1913, was anything said with relation to such key?

A. Yes, sir.

Q. 265. What, so far as you know?

A. I believe in January of that year Mr. E. C. Wilson received a letter, which I saw, in which Mr. Bole claimed to have been the original inventor of

(Deposition of W. W. Wilson.)

that type of key. At a conference on the morning of February 1 of that year, prior to the arrangement of the terms of settlement, in the office of the Wilson & Willard Manufacturing Company, there being present E. C. Wilson, Robert E. Bole and myself, and, I believe Mr. A. G. Willard, I turned to Mr. E. C. Wilson and said, "How about this underreamer key business?" Mr. Wilson turned to Mr. Bole and said, "Yes, Bob, how about this key business? What are you going to do with that?" Mr. Bole said, "You needn't worry about that; I will do nothing further with it."

Q. 266. What was the general nature of that letter written to your brother during January, 1913, to which you have referred? That is, what attitude did it reflect on the part of Bole, the writer?

A. In this letter Mr. Bole spent most of the letter recalling instances which had happened, and stating that he wished nothing further to do with Mr. E. C. Wilson in a business way except in one regard, and that was in regard to his claim to being the inventor of this underreamer key.

Q. 267. Had Mr. Bole, to your knowledge, ever had any dealings with said Edward Double, president of the Union Tool Company, prior to this time?

A. Not to my knowledge; no, sir. In fact, he had repeatedly expressed his opinion of Mr. Double and the methods of the [449] Union Tool Company in no uncertain terms.

Q. 268. What was the nature of such opinion?

A. He didn't like their methods of doing business

(Deposition of W. W. Wilson.)

did not think their manner of manufacturing other people's articles without license was right.

Q. 269. Since that time has he had any dealings, to your knowledge, with said Edward Double or the Union Tool Company?

A. Yes, sir. At the termination of the relations of the Wilson & Willard Manufacturing Company and Mr. Bole, Mr. Bole made arrangements with Mr. Double to have the Bole pumps manufactured at Torrance, California, at the plant of the Union Tool Company, of which Mr. Double was president, and to that end he purchased from the Wilson & Willard Manufacturing Company a liner boring-machine for boring the liners for Bole pumps, and had the same shipped to Torrance, to the plant of the Union Tool Company. I happened to be in the plant of the Union Tool Company at Torrance, California, when this machine was brought in to the plant. Some time after that, however, he ceased having these manufactured at Torrance, and established a plant on Santa Fe Avenue in the city of Vernon, which adjoins the city of Los Angeles, and had the liner boring-machine and other apparatus brought to that plant, where, later, I saw the same. He has testified for Mr. Double in a suit which the Union Tool Company has pending against the Wilson & Willard Manufacturing Company.

Q. 270. When the detachable block is in place and held in place by the bottom bolt in Complainant's Exhibit Defendant's Reamer Type "F," what is the effect produced upon the expansion and collapsion

(Deposition of W. W. Wilson.)

action of the cutters or bits?

A. It merely tends to assist the action caused by the shoulders on the lower ends of the prongs of the underreamer body in the expansion and collapsion of the cutters. [450]

Q. 271. What is the function of this key when in place in this reamer?

A. This key supports the lower end of the spring when the parts in the reamer are all in working position, and also limits the downward movement of the spring-actuated rod by the contact of the upper edge of the slot in the spring-actuated rod coming in contact with the upper edge of the key. I now find that by measurement this will not permit the lower end of the spring-actuated rod to come in contact with the inserted block.

Q. 272. So that that block and bottom bolt which holds it in place are for what purpose?

A. For the prevention and loss of the parts out of the underreamer body in case the spring-actuated rod or key are broken.

Q. 273. And as to the block considered by itself when in place?

A. It simply forms an extension of the bearing-faces at the lower ends of the prongs or forks at the lower end of the body.

Mr. BLAKESLEE.—Defendant not being as yet represented, it is to be assumed that the cross-examination is waived. This closes complainant's *prima facie* case. [451]

United States of America,
State of California,
County of Los Angeles,—ss.

I, I. Benjamin, a notary public in and for Los Angeles County, State of California, duly sworn and qualified to act as such, do hereby certify that the foregoing is a full, true and correct transcript of the testimony and proceedings taken and had in the taking of the depositions of E. C. Wilson and W. W. Wilson in the cause therein entitled, together with all questions asked, answers made, objections, motions and notice of motions made upon the record in said cause at the taking of the depositions before me in said cause from and after January 12, 1915, to and including the present date, to wit, February 16, 1915.

IN TESTIMONY WHEREOF, I have hereunto set my hand this 17th day of February, 1915, and have attached my seal of office thereto.

[Seal]

I. BENJAMIN,

Notary Public in and for Los Angeles County, State
of California.

[Endorsed]: In the United States District Court,
Southern District of California, Southern Division.
E. C. Wilson, Complainant, vs. Union Tool Com-
pany, Defendant. In Equity No. A-4. Depositions
of E. C. Wilson and W. W. Wilson, taken on behalf
of Complainant, February 16, 1915. Filed Feb. 23,
1916. Wm. M. Van Dyke, Clerk. By Chas. N. Will-
iams, Deputy Clerk. [452]

*In the United States District Court Within and for
the Southern District of California, Southern
Division.*

IN EQUITY—No. A-4.

ELIHU C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant.

Proceedings Had July 23, 1915.

Depositions taken on behalf of defendant in the above-entitled suit, pursuant to stipulation of counsel, commencing at the hour of 9:30 A. M. on Friday, July 23, 1915, at the office of Frederick S. Lyon, 503-8 Merchants Trust Building, city of Los Angeles, California, before I. Benjamin, notary public in and for Los Angeles County, State of California.

Present: FREDERICK S. LYON, Esq., on Behalf of Defendant.

RAYMOND IVES BLAKESLEE, Esq.,
on Behalf of Complainant, and Com-
plainant E. C. Wilson personally.

Whereupon the following proceedings were had.

Mr. BLAKESLEE.—Complainant gives notice to the defendant at this time that alternative to any disposition which may be made of equity suit No. B-62, consolidated by the order of the Court with equity suit No. A-4 consolidated, in which these proceedings are being conducted, namely, any disposition which [455] may be made of said equity

(Deposition of Arthur P. Knight.)

suit No. B-62 at the final hearing of this case with respect to such consolidation of said two cases, complainant at such final hearing will rely upon claims Nos. 2, 4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 19, of the Wilson Patent in suit herein. This notice of alternative attitude or position is given at this time in order that defendant may be apprised in the premises before commencing the taking of its proofs.

Deposition of Arthur P. Knight, for Defendant.

ARTHUR P. KNIGHT, called as a witness on behalf of defendant, being first duly sworn according to law, deposes and says as follows:

Direct Examination.

(By Mr. LYON.)

Q. 1. Please state your name, age, residence and occupation.

A. Arthur P. Knight; age, 50 years; occupation, patent attorney; residence, Glendale, California.

Q. 2. Please explain to us what you mean in your last answer by the term "patent attorney."

A. My business is that primarily of soliciting patents before the United States Patent Office. In connection with that I have done considerable expert work in giving testimony before the United States Courts in infringement suits.

Q. 3. What experience have you had which would tend to qualify you to testify as an expert in mechanical matters?

A. From 1886 to 1890 I was employed as Assistant Examiner in the United States Patent Office in the examination of applications for patents, and since

(Deposition of Arthur P. Knight.)

1890 I have been employed almost continuously in the preparation and prosecution of applications for letters patent and in expert work before the courts.

Q. 4. While you were assistant examiner of the United [456] States Patent Office what were your duties?

A. My duties were to examine applications for United States patents, to see, first, whether they were in proper form as required by law, and second, to examine the state of the art, to ascertain whether the subject matter of the application was novel and patentable.

Q. 5. Are you familiar with mechanical drawings? A. Yes, sir.

Q. 6. To what extent?

A. I have had occasion during all the time in my experience in the Patent Office and my experience as an expert to examine drawings and Patent Office drawings, in order to understand the construction and operation of the devices or machines therein shown, and I have made a great many drawings of such devices and machines myself.

Q. 7. You have stated that you have given testimony in patent cases as an expert in courts. To what extent, in a general way?

A. During the last eight years I have given testimony in a great many cases before the United States courts, but just how many I am not prepared at present to say.

Q. 8. In this court there is a suit pending entitled the Union Tool Company et al., vs. the Wilson

(Deposition of Arthur P. Knight.)

& Willard Manufacturing Company, Circuit Court No. 1540. Did you give expert testimony in that suit?

Mr. BLAKESLEE.—We admit that. That is a matter of record. A. Yes, sir.

Q. 9. (By Mr. LYON.) What occasion, if any, have you had to familiarize yourself with drilling of oil wells, and particularly, with the construction or manufacture or use of underreamers or devices for underreaming well casing? [457]

A. I have watched oil well drilling rigs in operation and have seen the tools, particularly the underreamers, in various stages of the manufacture thereof and watched their use. Of course the actual operation being at the bottom of the well, it was not visible.

Q. 10. Have you examined and considered and are you familiar with Complainant's Exhibit Wilson's Patent, being the patent in suit, No. 827,595?

A. Yes, sir.

Mr. LYON.—Defendant offers in evidence Defendant's Exhibit Double Patent No. 1, being United States Letters Patent No. 734,833; also, a copy of letters patent No. 748,054, dated December 29, 1903, to Edward Double for underreamer, and the same to be marked Defendant's Exhibit Double Patent No. 2.

Mr. BLAKESLEE.—That is the one you offered for identification?

Mr. LYON.—It is not for identification. It is offered as part of his examination. The defendant offers in evidence a copy of letters patent No. 796,-

(Deposition of Arthur P. Knight.)

197, dated August 1, 1905, granted to Edward Double for underreamers, and the same marked Defendant's Exhibit Double Patent No. 3.

Defendant offers in evidence Defendant's Exhibit O'Donnell & Willard Patent, the same being a copy of letters patent No. 762,435, dated June 14, 1904, to Thomas A. O'Donnell and Arthur G. Willard for underreamer and drill.

Defendant offers in evidence a copy of letters patent No. 683,352, dated September 24, 1901, to John C. Swan for underreamers, and the same is marked Defendant's Exhibit Swan Patent.

Q. 11. Have you read and are you familiar with Defendant's Exhibits Swan Patent, O'Donnell & Willard patent and Double patents Nos. 1, 2 and 3?

A. Yes, sir. [458]

Q. 12. And understand the construction and mode of operation of the devices therein disclosed?

A. Yes, sir.

Q. 13. And have you examined and are you familiar with Complainant's Exhibit Old Style Double Underreamer, Old Style Double Underreamer-cutter, Improved Double Reamer and Cutters, Reamer Type "F," Defendant's Reamer Type "D," Reamer Type "E," offered in evidence in this case?

A. Yes, sir.

Q. 14. Have you examined and are you familiar with the Complainant's Exhibit Wilson File Wrapper and Contents? A. Yes, sir.

Q. 15. Have you read and considered the deposi-

(Deposition of Arthur P. Knight.)

tions of Elihu C. Wilson and W. W. Wilson given in this case?

A. I have read parts of them, if not all.

Q.16. Will you please take Complainant's Exhibit Wilson's Patent and explain the mode of operation and construction and inter-relation of parts of such, with the device therein disclosed, and describe and compare the same with Complainant's Exhibits Old Style Double Underreamer, Old Style Double Underreamer-cutter, Improved Double Reamer and Cutters, Reamer Type "F," Defendant's Reamer Type "D," Reamer Type "E," and with the disclosures of Defendant's Exhibits Swan Patent O'Donnell & Willard Patent and Double Patents Nos. 1, 2 and 3?

Mr. BLAKESLEE.—In this connection the consideration of Defendant's Exhibit Double Patent No. 3 is objected to as not being a publication of an invention prior to the date of invention of the Wilson patent in suit.

The same objection is also urged with respect to Defendant's Exhibit Double Patent No. 2.

The same objection is also urged with respect to Defendant's Exhibit O'Donnell & Willard Patent. [459]

A. Complainant's Exhibit Wilson Patent relates to an underreamer comprising a hollow body terminating at its lower end in prongs forming a fork, the lower edge of said prongs being provided with lugs which are formed with spreading bearings for spreading the cutters apart, and the cutters being

(Deposition of Arthur P. Knight.)

mounted between these prongs and adapted to engage with shoulders on the prongs and with the said spreading bearings, so as to tilt the cutters into position for underreaming, and a spring-operated cross being provided within the hollow body and engaging with recesses in the cutters to draw the cutters up into co-operative relation with the said shoulders and spreading bearings. The spreading bearings in the Wilson patent are on the prongs at each side, leaving the space between the prongs free or open, so that the shanks of the cutters can extend into this space. This enables the requisite expansion of the cutters to be obtained while maintaining the shank portions of the cutters comparatively thick throughout. The lower ends of the lugs at the bottom of the prongs in the Wilson patent are formed with a beveled end, indicated "17," in the drawing which engage with rounded shoulders "16" on the cutters to spread the cutters as the same are drawn up by the action of the spring. Complainant's Exhibit Old Style Double Underreamer shows only the body and can be explained with reference to Defendant's Exhibit Double Patent. It shows in figures 10, 11 and 12, the form of cutters adapted for use with this underreamer body. This Double underreamer comprises a hollow body, a downward extension, from which is defined as a hollow-slotted extension, and is provided with dovetail slipways at the sides, and with bevel faces 25 at its lower end for engaging shoulders 26 on the cutters to expand the cutters, and with spreading bearings

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constituted by the oppositely arranged parallel bearing faces at either side of the parts through which the key-way 7 extends, the spring-operated rod being provided in the hollow body and [460] having a cross-piece or key which engages with recesses 16 in the cutters to draw the cutters upwardly into operative position on the body. In such upward motion of the cutters shoulders 26 engage with the beveled or rounded bearing-faces 25 at the bottom of the extension on the body to spread the cutters apart; and the cutters are then held in spreaded position by the engagement of the bearing-faces 18 thereon with the opposite parallel bearing-faces on the extension of the body, and by engagement of the dovetail flanges with the dovetail slip-ways, on the extension of the underreamer body. The bearing-faces constituted by the oppositely arranged parallel bearing-faces in the extension of the Double underreamer, extends across and between the side members of said extension which are provided for the dovetail slip-ways; and the bearing-faces 18 on the cutters extend completely across said cutters at the inner side thereof so as to engage with these bearing-faces on the body extension throughout the width of the backs of the cutters.

Comparing the Double underreamer of this patent and the old style Double underreamer with the Complainant's Exhibit Wilson Patent, the mode of operation in a general way, so far as it relates to the result on the cutters, namely, that they are expanded or spread apart by engagement with suitable bearing-

(Deposition of Arthur P. Knight.)

faces on the cutters and body in such manner that the cutters are tilted in such spreading action, and are then held apart by the engagement of bearing-faces on the body and cutters, is the same in each case, this mode of operation being in fact that of the Double patent No. 734,833. In the actual construction whereby this general result is obtained, there is difference between the two underreamers. In the Double patent the spreading portion 25 and the bearing-faces directly above such spreading portion constituted by the oppositely arranged parallel bearing-faces having the key-way 7 therein, are located between the sides of [461] the extension of the body and directly back of the cutters, and the spreading action is secured by forming an incline or beveled shoulder on the back of the cutter which engages with the beveled or rounded face 25 at the bottom of the extension of the mandrel body. This construction involves cutting away a portion of the shank of the cutter to receive this bearing portion on the mandrel body. Or, putting it in another way, it requires the extension backward or inward of a portion of the cutter to form the shoulder 26, with the result that a recess is left or formed above said shoulder. Another result of this construction is that the lower end of the extension of the body is substantially closed by the said portion which carries the spreading or expansion faces 25, and the spreading bearings constituted by the oppositely arranged parallel bearing-faces having the key-way 7 therein.

In the Wilson Patent No. 827,595 the space be-

(Deposition of Arthur P. Knight.)

tween the sides of the extension of the hollow mandrel body is left open except for the retaining bolt 11; and the expanding and spreading bearing-faces are formed or provided on the lugs 2' at either side of this space. Thus, in the Wilson patent, page 2, lines 73 to 83, I find the following language: "Said spreading-bearings are on the lugs 2' which constitute wedges for wedging the cutters apart, and said bearings are at the sides of the lower ends of the body, thus engaging the outer edges of the cutters to hold the cutters apart, and leaving an open space between the middle portions of the cutters for a greater distance upward from the lower ends of the cutters than would be the case were the cutters held apart by any intermediate portions between the lugs." Also on page 1, lines 16 to 20, one of the objects of the invention is stated as follows: "To leave a maximum open space between the cutters to receive the loose material or sludge at the bottom of the well or other opening during the operation of drilling." This feature of the Wilson patent No. 827,595. [462] namely, that the space between the lower ends of the prongs or the lugs 2' thereon, is left open and unobstructed, is an important feature of the Wilson Patent not only for the reason stated in the specification, as above, but has an important bearing on the construction of the cutters, and their interrelation with the body, for the reason that it renders this space available for occupation by the shanks of the cutters when collapsed, thereby enabling the cutters to collapse closer together for a given thickness

(Deposition of Arthur P. Knight.)

of shank than they could if this space were occupied by the spreading-bearings. Moreover, this construction removing the spreading-bearings from the center and locating it at each side only, enables the inner faces of the cutters to be made straight, or substantially so, as shown in figure 8 of the Wilson Patent.

Mr. LYON.—(Interrupting.) Pursuant to the request of counsel for the complainant, we have produced three 4½-inch old style Double cutters as manufactured by defendant company's predecessor, the Union Oil Well Tool Company in 1902 and three, and showing three different lengths of shank used with 4½-inch underreamers of that date; and these are offered in evidence as Defendant's Exhibits Old Style Double Underreamer-cutters 1, 2 and 3, respectively.

A. (Continuing.) Comparing the Defendant's Exhibit Old Style Double Underreamer-cutters with the Double Patent, No. 3, is similar to that shown in Figs. 10 to 12 of the Double Patent No. 734,833 except in the following respects: The cutter portion at the lower end has been widened out so as to be somewhat wider than the body of the cutter, and the spreading-bearing portion has also been widened out so as to form a spreading-bearing of substantially the same width as the cutter portion proper, to form flanges or shoulders; and the cutter-shank is provided at its upper portion with a slot instead of a recess for receiving [463] the key. Also in this exhibit the hole on its outer face corresponds in posi-

(Deposition of Arthur P. Knight.)

tion to a hole indicated on Fig. 10 of the Double patent, but not described in said patent.

No. 2 corresponds in construction to No. 3 except that the shank is shorter, the only difference in this construction being that the short shank with a given lateral separation of the bearings on the underreamer body will produce an increased tilting action and spread the lower ends of the cutters further apart than would be the case with a long shank.

Mr. BLAKESLEE.—We note that one Thomas J. Griffin has come into the room during the deposition of this witness, and, as we have been informed he will be a witness for the defendant in the proceedings, we will ask that he be excluded from the room, if that be the plan of the defendant.

Mr. LYON.—As Mr. Griffin will simply testify as an expert, he is entitled to hear the testimony and will remain.

A. (Continuing.) Cutter No. 1 is similar to No. 2 except that *is* has a longitudinal or vertical groove cut in the bearing-face on the inner side thereof.

Referring to Double patent No. 734,833, Fig. 9, it will be seen that a screw pocket was provided in the lower end of the spring-operated member for the insertion of an I-bolt to draw said member down; and when the bearing-faces 18 are made so thick that they are in the way of this I-bolt, this is taken care of by forming a groove in said bearing-faces as in this cutter No. 1 to permit passage of the I-bolt. I have stated that cutter No. 3 has its bearing portion widened out, forming flanges at each side. This gives a

(Deposition of Arthur P. Knight.)

somewhat wider bearing-face and corresponds in construction and function to the part shown at 10 in the Double patent No. 748,054, being Defendant's Exhibit Double Patent No. 2. Cutters 1 and 2 also have this feature, except that in 1 and 2 this flange runs down to the wide portion of the cutter, whereas in No. 3 it is spaced from the wide portion of the cutter. [464]

Comparing these cutters Nos. 1, 2 and 3 of the old style Double underreamer with the Wilson patent No. 827, 595, Complainant's Exhibit Wilson Patent, these cutters each show a bearing face on the inner side which is wider than the shank of the cutter; and in the case of No. 3 it is substantially the same width as the wide cutting portion at the bottom of the cutter. When any of these cutters is used in the appropriate Double underreamer body, these extended portions of the bearing surface will engage with the bearing surface on the body simultaneously with the rest of the bearing surface. The upper ends of these widened *our* portions do not, however, constitute shoulders in the sense in which that term is used in the Wilson patent, namely, shoulders for engagement with the beveled end faces at the bottom of the extension or prongs of the hollow body to spread the cutters apart, this function being performed in these cutters Nos. 1, 2 and 3 by the inclined shoulder which is directly above the bearing faces on the inner side of the cutters.

The body of the Improved Double Underreamer is similar to that shown in Double Patent No. 734,833,

(Deposition of Arthur P. Knight.)

Defendant's Exhibit Double Patent No. 1, except that the lower portion of the extension has been cut or notched on each side. The cutter is also similar to that shown in the Double patent except that cutting portion at the lower end has been widened out and the bearing at the inner side of the cutter has also been widened out at the lower portion thereof to the same width as the cutting portion. When the cutter is in raised and expanded position on the body, the bearing-face on the inner side of the cutter bears on the oppositely arranged parallel bearing-faces on the extension of the body, not only for the width of the shank of the cutter but also on the extended portion formed by these extensions of the bearing-faces on the cutters. These extended portions [465] of the bearing-faces form projections at right angles to the cutter, but they do not form shoulders in the sense in which that term is used in the Wilson patent, as they do not engage with the faces on the underreamer body extension to expand the cutters, this function being performed by the inclined shoulder directly above the bearing-face at the inner side of the cutters in the Double underreamer. This cutter of the improved Double underreamer also shows a groove in the bearing-face to make room for the I-bolt for drawing the cutters down and collapsing the same. In regard to this widening out of the bearing-face on the inside of the cutters in this improved Double underreamer, I call attention to the fact that it is not widened out to the full width of the underreamer body extension, the cutting away of the remainder of this width being

(Deposition of Arthur P. Knight.)

without any useful function or being necessitated or rendered desirable by the exigencies of manufacturing, it being easier to plane this cut right across than to attempt to cut it out without removing the extreme end portion. This widening out of the bearing-face at the inner side of the Double underreamer-cutters gives a wider bearing at the back of the cutter, such as is shown in the Defendant's Exhibit O'Donnell & Willard patent where the cutters 12 and 12' are formed with cutting portions at their lower ends which are wider than the shanks of the cutters and are provided at the inner side of the cutters with bearing-faces which extend clear across the full width of these widened cutting portions. This feature of the bearing faces, the full width of the cutters, is also shown in Defendant's Exhibit Swan Patent, wherein the cutters C and C' slide on ways which engage with the inner faces of the cutters, forming bearing-faces the full width of the cutters, or substantially so. This improved Double underreamer does not, however, embody the peculiar feature of the Complainant's Exhibit Wilson Patent above stated which consists in the removal of any obstruction from the space between the prongs at the lower end thereof and the spacing [466] apart of the spreading bearings so that they are at either side of this space. In so far as there is any advantage in the construction of the Wilson underreamer in this manner arising from the maintaining of the space open, and from the utilization of such space, to receive the cutter-shanks when fully collapsed, the Double improved underreamer and cut-

(Deposition of Arthur P. Knight.)

ters do not present such advantages and do not embody this feature of the Wilson patent.

The Double underreamer Type F is similar to Double Improved Underreamer excepting in the following respects: The spring-operated rod is mounted therein by different means, consisting of a removable key past two slots in the hollow underreamer body, and this construction being known as the Bole construction and being disclosed in patent No. 1,080,135 issued to Robert E. Bole and Edward Double, December 2, 1913, and a copy of which I now have before me. The cut at the lower end of the extension of the mandrel body is in this case made straight and not dovetailed, this being the cut at the lower end of the extension of the hollow body and across the end of each side. The lower end of the extension of the hollow body is closed in this construction by a plug whose side faces are continuous with the opposite parallel bearing-faces at the inner side of the dovetailed slip-way, and this plug or block is retained in place by a cross bolt. The cutters in this construction are similar to the improved Double underreamer except that the method of suspension is by means of a lug or projection on the cutter engaging with a recess in the spring-operated rod, the effect being the same in either case. When the block or plug in the lower end of this type F Double underreamer is assembled in condition for use and retained in position by its bolt, it forms a rigid part of the underreamer body extension and its side faces constitute opposite parallel bearing-faces identical in function with the opposite

(Deposition of Arthur P. Knight.)

parallel bearing-faces in Defendant's Exhibits Double Patents [467] Nos. 1 and 2. In so far as there is any bearing of the cutter on the opposite parallel bearing-faces beyond this block up to the limits of the outer edges of the dovetailed side ways, such bearing is identical with that disclosed in Defendant's Exhibits Double Patents Nos. 1 and 2, and the extensions of the bearing back of the cutter beyond this point at each side simply result in the extension of the function of the intermediate function between these extended portions, the whole bearing-face on the inside of the cutter operating on the opposing face on the extension of the body as a single bearing. In so far as there is any advantage due to the widening of the part in this manner, it has the same advantage as if presented in Defendant's Exhibit O'Donnall & Willard Patent and Defendant's Exhibit Swan Patent. This construction of the type F Double underreamer, however, does not present the special advantages and features of Complainant's Exhibit Wilson Patent in spacing apart the bearings, leaving an unobstructed space between them for receiving the shanks of the cutters, whereby the advantages I have above referred to may be produced, namely, the opening of the lower end of the underreamer body, with the advantages set forth in the Wilson patent and the ability to collapse the cutters while retaining the shanks in full thickness throughout without cutting the same to form a shoulder for engagement with a centrally located bearing such as is present in this type F as well as in the Double im-

(Deposition of Arthur P. Knight.)

proved, the old style Double and the Double patents Nos. 1 and 2. In connection with this type F, the removable block or plug at the lower end of the extension of the body forming a spreading bearing for the cutters, corresponds in function and mode of operation to No. 10 in Defendant's Exhibit Double patent No. 3, said part 10 being removably mounted in the lower end of the underreamer body and being held in position by a cross pin, and having expansion face 12 at its lower face, and spreading bearing 11 at each [468] side, corresponding identically in this respect to the removable block or plug at the lower end of the extension of the underreamer body in this type F underreamer.

Type D is substantially the same as the Double improved, having the dovetailed notches cut out at the lower end of the underreamer body, and type E is the same as type D except that the notches are cut straight. The same statements I have made with respect to the Double improved underreamer apply to types D and E.

At this point an adjournment was taken until 2 o'clock P. M.

Office of Frederick S. Lyon, 503-8 Merchants Trust
Bldg.,

Los Angeles, Cal., Friday, July 23, 1915,
2 o'clock P. M.

This being the time and place to which the further taking of depositions in this case on behalf of defendant was continued, proceedings are now resumed.

(Deposition of Arthur P. Knight.)

Present: FREDERICK S. LYON, Esq., on Behalf of
Defendant.

RAYMOND IVES BLAKESLEE, Esq.,
on Behalf of Complainant, and the
Complainant E. C. Wilson, Person-
ally.

ARTHUR P. KNIGHT recalled.

Direct Examination (Resumed).

(By Mr. LYON.)

Mr. LYON.—The defendant offers in evidence copy of letters patent No. 1,080,135, dated December 2, 1913, issued to Robert E. Bole and Edward Double for underreamers, to be marked as “Defendant’s Exhibit Bole Patent.” [469]

(The said copy of letters patent so offered in evidence is marked “Defendant’s Exhibit Bole Patent,” together with the title of the court and cause and the date upon which the same was offered.)

Q. 17. (By Mr. LYON.) Will you please now compare the construction and inter-relation of parts of Complainant’s Exhibit Type “F” with the device of defendant’s exhibit Double Patent Nos. 1 and 2, and Defendant’s Exhibit Old Style Double Cutters Nos. 1, 2 and 3, particularly insofar as the formation of the bits is concerned and the dovetails on the bits, and the parts upon which the dovetails contact, and compare these same parts with any similar parts to be found in the device of Complainant’s Exhibit Wilson Patent.

A. In the Defendant’s Exhibit Double Patent No. 1 there is a portion of a downward extension of the

(Deposition of Arthur P. Knight.)

underreamer body extending across between the sides or dovetailed portions, this transversely extended portion being the part that contains the key-way 7, and is formed with the oppositely arranged parallel bearing faces which engage the inner faces of the cutters, and particularly the bearing faces 18 of said cutters as shown in said patent, to hold the cutters in expanded relation. In the type F reamer a vertical slot has been formed to admit the transversely extending portions, or, if you please, a slot to slide existing therein has been enlarged so that only a portion of this transversely extending member is left, the remaining portion of the transversely extending member presenting oppositely arranged parallel bearing faces at each side directly within the dovetails, and the cutters of the type F are provided with bearing faces on their inner faces which engage these remaining portions of the vertical oppositely arranged parallel bearing faces on the extension of the underreamer body. So that this remaining portion performs in inter-relation with the cutter the same [470] function that it does in the Defendant's Exhibit Double Patent No. 1. When the type F underreamer is in assembled condition, these remaining portions of the oppositely arranged parallel bearing faces are connected by the bearing faces on the opposite sides of the removable block which is at that time in position so as to form a continuous bearing face on each side of this member. The same comparison exists with regard to Defendant's Exhibit Double Patent No. 2, with the additional resemblance that in

(Deposition of Arthur P. Knight.)

the type F underreamer and in said Double Patent No. 2 there is an additional dovetail at the lower portion of the underreamer extension co-operating with an additional flange or dovetailed portion on the cutter on each side. When the cutter of the type F underreamer is in a position for use, the bearing surface on the inner face rests against these remaining portions of the opposite parallel bearing faces on the underreamer body extension in the same manner as it does in Defendant's Exhibit Double Patents Nos. 1 and 2, and in addition the bearing faces on the inner faces of the cutters bear against the fixed bearing block between the bearing faces of the body extension in the same manner as the bearing faces at the central portion of the inner faces of the cutters bear against the central portion of the transversely extending portion of the lower end of the extensions of the body in Defendant's Exhibit Double Patents Nos. 1 and 2.

Comparing this bearing with the bearing faces on the inner sides of the cutters in this type F underreamer with the Wilson Patent, the inner faces of the prongs 2 in that patent extend between the shoulders 2" thereof so that there is nothing corresponding to the special construction or function of these remaining portions of the opposite parallel bearing faces except in regard to the general mode of operation which, of course, is the same in the Wilson patent as it is in Defendant's Exhibit Double Patent No. 1. But the presence of these remaining portions [471] of the opposite parallel bearing faces

(Deposition of Arthur P. Knight.)

in type F underreamer body results from the mode of operation of the cutter in conjunction with these portions being the same as it is in the original Double patent, and insofar as the Wilson patent departs from this construction and produces any difference in action, it is a departure also from this type F. In other words, the presence of these remaining portions of the opposite parallel bearing faces in the type F will prevent the inward collapsing of the cutters in the special manner which is permitted in the Wilson patent, by removing all obstructions from the lower end of the center of the underreamer body extension. The dovetails on the Double cutters co-operating with these remaining portions of the opposite parallel bearing faces would prevent the collapse of the cutters until they have moved down sufficiently to bring their shoulders on their inner faces beyond the lower end of these oppositely arranged parallel bearing faces. These remaining portions of the oppositely arranged parallel bearing faces therefore correspond in function with the transverse portion of the original Double patent, Defendant's Exhibit Double Patent No. 1. The above statement also applies to the cutters of Defendant's Exhibit Old Style Double Cutters Nos. 1, 2 and 3, the bearing faces thereon co-operating with the oppositely arranged parallel bearing faces in the same manner as in Defendant's Exhibit Double Patents Nos. 1 and 2.

Q. 18. In the device of Complainant's Exhibit Wilson patent you find a bolt 11 which is also shown in Complainant's Exhibit Wilson Underreamer.

(Deposition of Arthur P. Knight.)

Please state what is the purpose of this bolt in the Wilson underreamer, and in what manner, if at all it corresponds to either the bolt or the bolt and removable end block in the Complainant's Exhibit Type F Underreamer, either in function or effect.

A. In the Wilson patent it is stated on page 2, lines 60 to 62: "The cross-piece 11 serves as a brace for the prongs [472] of the fork and prevents accidental removal of the cutters and tee or cross 5." In Complainant's Exhibit Wilson Underreamer this bolt or cross-piece presumably serves the same function. In Complainant's Exhibit Type F the removable block which is held in position by a bolt serves as the main portion of the spreading bearing and fulfills the same function as the central portion of the transversely extending member in Defendant's Exhibit Double Patent No. 1. The function of the bolt is primarily to hold this block in position. The function of this block is therefore entirely distinct from the function of the cross-piece or bolt 11 in the Wilson patent, as it is essential in the Wilson patent that there shall be no obstruction here in this part of the apparatus such as is offered by this block, the bolt 11 in the Wilson patent being sufficiently small and sufficiently high up not to interfere with the collapse of the cutters as shown in Fig. 1. The pin or bolt in type F underreamer does, however, also connect the two sides of the underreamer and the block into a rigid body which is exactly unitary when the device is assembled.

Q. 19. And in the last respect, to wit, of getting the two sides of the body together into one unitary

(Deposition of Arthur P. Knight.)

structure, to what device does it most nearly correspond?

Mr. BLAKESLEE.—Objected to as indefinite.

A. I should say that the bolt and block together take the place of the intermediate portion of the lower end of the extension in the Defendant's Exhibit Double Patent No. 1.

Q. 20. (By Mr. LYON.) And how does such block and bolt of Complainant's Exhibit Type F Reamer compare with the block and bolt of Defendant's Exhibit Double Patent No. 3 device in that respect?

Mr. BLAKESLEE.—Objected to as leading.

A. I have already stated in answer to your previous question that this block in the type F underreamer is substantially [473] the same in function and mode of operation as the block 10 in the Defendant's Exhibit Double Patent No. 3; and the bolt which fastens the block in the type F underreamer corresponds in function to the pin 22 in Defendant's Exhibit Double Patent No. 3.

Q. 21. (By Mr. LYON.) What have you then to say as to whether the block and bolt, or bolt alone, in Defendant's Exhibit Type F Reamer are or are not the mechanical equivalent of the cross-piece or bolt 11 of the device of the Wilson patent?

Mr. BLAKESLEE.—Objected to as calling for a conclusion and not for a statement of facts; and further, as leading and suggestive.

A. The block and bolt in the type F underreamer are certainly not the equivalent of the bolt or cross-

(Deposition of Arthur P. Knight.)

piece in the Wilson patent, as the presence of this block prevents the mode of operation on which the Wilson patent is based. As to whether the bolt alone without the block would be such an equivalent, it seems to me that if this block was taken away the bearing face would be so small that it is questionable whether the device would be operative. I cannot therefore say whether the bolt would operate in the same way or not.

Mr. BLAKESLEE.—We ask that the answer be stricken out on each of the grounds mentioned in the objection, and also because, in addition, it is evident that it cannot be responsive to the question.

Q. 22. (By Mr. LYON.) I take here one of the bits or cutters of Complainant's Exhibit Wilson Underreamer and I insert it in the body or mandrel portion of Complainant's Exhibit Type F Underreamer. Will you now take this device as thus assembled and explain to us how this Wilson substituted bit can be expanded or contracted in the type F reamer, and, if it cannot be, why not? [474]

A. It cannot be contracted for the reason that the inner face of the shank of the Wilson cutter engages with the remaining portion of the opposite parallel bearing faces and with the bearing block between these portions in such manner that it cannot be collapsed. The Wilson cutter requires all these portions to be cut away or it cannot enter and allow the cutter to be collapsed.

Q. 23. I now remove the bottom bolt and removable block from Complainant's Exhibit Type F

(Deposition of Arthur P. Knight.)

Underreamer, and ask you to state whether the afore-said Wilson cutters can be collapsed or expanded in accordance with the mode of operation of the Wilson patent as this type F reamer is now assembled?

A. It cannot, for the same reason as I have above stated. The remaining portions in this type F reamer of the opposite parallel bearing faces interfering with the collapse or inward movement of the shank.

Q. 24. Then what have you to say as to whether or not the type F reamer, even removing the bottom bolt and removable end block, embodies the principle of an open mouthed or forked reamer as set forth in Complainant's Exhibit Wilson's Patent?

Mr. BLAKESLEE.—Objected to as calling for a conclusion and not for a statement of facts, leading and suggestive.

A. It does not embody that principle.

Q. 25. (By Mr. LYON.) If it does not embody that principle, what principle in your opinion does it embody in that regard?

A. If the end block be removed from type F underreamer it would still embody the principle of Defendant's Exhibit Double Patent Nos. 1 and 2, but in an imperfect shape, in that a large and important part of the bearing surfaces had been eliminated.

Q. 26. Referring now to the bits or cutters of Complainant's Exhibit Wilson Patent, and to Complainant's Exhibit Wilson File Wrapper and Contents, will you explain to us what constitutes [475] in such bits the two shoulders having a bearing face

(Deposition of Arthur P. Knight.)

on their inner sides or surface, as distinguished from the bit or cutter of either Defendant's Exhibit Double Patent No. 1, 2 or 3, or the bit of the O'Donnell & Willard patent or invention, or of the Swan patent?

A. The shoulders in the Wilson patent are referred to in page 2, lines 2 and 3, as rounded corners or bearings 16 to ride more readily over the beveled end pieces 17 of the downwardly projecting plugs 2', and to engage said bearings for expanding the cutters. Also lines 39 to 41 of the same page: "The rounded shoulders 16 ride readily over the beveled faces 17." Also lines 84 to 90 of the same page. "I term the cutters 'shouldered cutters' for the reason that the rounded corners 16 which extend away from the shank at right angles thereto are in the nature of shoulders, the inner faces 4³ of which engage the spreading faces 9 of the said lugs 2' to brace the cutters and hold them apart." This last quotation was inserted by amendment filed April 9, 1906, to the original application of Wilson. And in this same amendment claims 16 and 17 as finally allowed were inserted, so that the definition of the shouldered cutters in this amendment was apparently to form a foundation for such claim. In view of these statements in the specifications, the shoulders on the cutters in the Wilson patent must be taken as having rounded portions for engaging with portions of the underreamer body to expand the cutters, and also having inner faces to engage the spreading faces on the underreamer body to hold the cutters apart after they are expanded.

(Deposition of Arthur P. Knight.)

Defendant's Exhibit Double Patent No. 1 does not show anything corresponding to the definition of shouldered cutters in lines 84 to 90 of the Wilson patent.

Defendant's Exhibit Double Patent No. 2 shows the bits [476] projecting out at the lower portion of the cutter and it also shows lateral projections 10. None of these parts correspond to the definition of the shoulders in the Wilson patent. The lateral projections 10 in the Double patent simply give a wider bearing and more effective dovetail engagement, and in this respect their function is the same as that of the wide bearings on the O'Donnell & Willard and Swan cutters and not the same as that of the shoulders in the Wilson patent.

Defendant's Exhibit Double Patent No. 3 does not show the shoulders, their function being performed by the shoulder on the inner face of the cutters and the bearing face on the cutter immediately below the same.

In regard to my statement as to the definition of the shoulders in the Wilson patent as distinguished from that of the Double cutter, I call attention to the statement in the File Wrapper of the Wilson patent on page 2, of the amendment dated May 12, 1906, as follows: "The Double cutter has its bearing-face entirely across the cutter instead of on the inner side of the shoulders at the sides of the shank as specified in these claims." This refers to claims 16 and 17, and defines the cutters as provided with bearing-faces at the sides only and not in the central portion.

(Deposition of Arthur P. Knight.)

Mr. BLAKESLEE.—We move that all those portions of the preceding answer pertaining to the purported disclosures of Complainant's Exhibit Wilson File Wrapper and Contents, be stricken out as amounting to mere guess or opinion or statement of conclusion of or by the witness, and not being the best evidence in any respect, the said file wrapper and contents themselves in these particulars offering the best evidence.

Q. 27. (By Mr. LYON.) Again referring, Mr. Knight, to the cutters of Complainant's Exhibit Type F Reamer and Double Improved Reamer, please compare such cutters with the disclosure of Complainant's [477] Exhibit Wilson Patent, as to the shouldered cutters, the shoulders having a bearing-face on the inner side of each of the shoulders.

A. As I have stated, the term "shouldered cutters" must, in the light of the Wilson specification, be taken to refer to the shoulders at each side of the cutter which are rounded so as to engage with suitable parts on the underreamer body to expand the cutters. In the improved Double underreamer the lateral projections at each side of the cutter do not perform this function, since by the time they have come up to the reamer body the cutter has already been expanded by the action of the shoulder on its inner face of the beveled lower end of the reamer body extension. Moreover, while this lateral expansion of the cutters in the Double improved underreamer has bearing-faces on the inner side, these bearing-faces are merely incidental and extensions of the

(Deposition of Arthur P. Knight.)

main or bearing-face proper of the underreamer which extends clear across the center of the face of the cutter. In the type F underreamer there are two lateral projections on each side, the first being the auxiliary of supplementary dovetail as shown in Defendant's Exhibit Double Patent No. 2, the second being formed by the lateral enlargement or increased width of the cutting portion of the cutter. The inner face of this increased width portion of the cutter does not come into riding engagement with the spreading bearing on the underreamer body until after the cutters are fully expanded. The supplementary dovetailed portion is extended up to the expanding shoulders on the inner face of the cutter-shank in the type F underreamer; but so far from being rounded off to operate as the expanding means, it is cut away or beveled so that it only engages by a sharp edge, if at all, with the expanding bearing on the body, and cannot therefore perform any effective expanding function. I do not therefore find in either the type F or the Double improved, the shoulders you refer to. [478]

Q. 28. Referring now to the inner thrust-bearings which take the inward thrust in underreaming, what have you to say with respect to such thrust-bearings as they existed upon the cutters of Complainant's Exhibit Type F and Double Improved Reamers as compared with the bearing-faces of the inner sides of the two shoulders of the cutter of the Wilson underreamer patent?

A. In the Type F underreamer the inner-thrust-

(Deposition of Arthur P. Knight.)

bearing, or the bearing taking the inner-thrust, I take to be the same as has been called the spreading-bearing in the type F. This thrust-bearing extends clear across the inner face of the cutter. The same is true of the Double improved underreamer wherein the inner-thrust or spreading-bearing extends clear across the inside of the cutter. In the Wilson patent there are separated bearings on each side, the space between these bearings being left purposely unobstructed for the reasons stated in the patent. In a general way, in regard to the tilting of the cutter, the result may be the same. But this result is performed respectively by different means in the Wilson patent, in so far as it is effected by separated bearings at opposite sides of an open central space, so as to leave said space open for the reasons stated in the patent.

Q. 29. It has been claimed here in this suit by E. C. Wilson, testifying in his own behalf, or by his brother W. W. Wilson, testifying in his behalf, or by both of them, that in the cutters of Complainant's Exhibit Double Improved Reamer the notch in the face of the thrust-bearing of the cutters divides such thrust-bearing into shouldered cutters corresponding to the shouldered cutters of Complainant's Exhibit Wilson Patent in function and effect. Do you agree or disagree with such testimony?

Mr. BLAKESLEE.—Objected to as amounting, if anything, to testimony on the part of counsel, and to statements of conclusions as to the nature and effect of testimony, and as leading and not calling for a

(Deposition of Arthur P. Knight.)

statement of facts or comparison of structures [479] without such leading.

A. I disagree with such testimony, as the groove set on the inner face of the cutters does not materially affect the bearing surface, the area of the groove being comparatively small as compared with that of the whole bearing surface, and the bearing surface on each side of this groove extending substantially or almost to the center. So that the wide separation which is inherent and essential to the mode of operation of the Wilson patent is in no way presented by this groove.

Q. 30. (By Mr. LYON.) Could such a cutter as the cutter of Defendant's Exhibit Type F or Complainant's Exhibit Double Improved reamer be used in a device built in accordance with the drawings and description of Complainant's Exhibit Wilson Patent, and operate upon the mode of expansion and contraction therein illustrated and described?

A. No, for the reason that the upper edges of the lateral extensions in both of these Double under-reamer cutters, even if properly proportioned to reach the expanding surface on the body sufficiently soon to expand the cutter, are not adapted to do so. In the type F cutter the first lateral projection formed by the supplementary dovetails or flange has a sharp edge and is of such small area that it could not be used for expanding the cutters against the considerable resistance of the spring without cutting the metal. The second lateral extension due to the widening of the cutting portion of the cutter is not

(Deposition of Arthur P. Knight.)

rounded as required for successful operation of the Wilson cutter so as to enable it to ride over the expanding portion on the body. The same statement applies to the Double improved underreamer in which the lateral projections on the cutter have sharp upper edges instead of being rounded.

Q. 31. Is there any time in the operation, either of expansion or contraction of the cutters of Complainant's Exhibit [480] Type F Reamer, when any portion of the cutters lies between any fork or open-mouthed construction, corresponding in any degree with the fork or open-mouthed construction of the reamer of Complainant's Exhibit Wilson Patent? A. No, sir.

Q. 32. I notice, Mr. Knight, that in Complainant's Exhibit Type F Underreamer the bottom end of such reamer is cut away clear across the body of the reamer at the thrust-bearing. Is the entire surface so formed used by the bits at any time?

A. No. In this 4½-inch underreamer there is approximately half an inch on each side that does not perform any bearing functions.

Q. 33. Why, then, has this metal been removed in this device? By this I mean the half-inch on each side.

A. Simply because that was the easiest way to form this portion of the body, by cutting away clear across.

Q. 34. If this half-inch of metal on either side had been left on the ends in the same manner that it is left in Complainant's Exhibit Old Style Double Underreamer would it in any manner change the

(Deposition of Arthur P. Knight.)

inter-relation of the parts of the reamer Complainant's Exhibit Type F or the mode of operation of such parts? A. Not that I can see.

(By consent of counsel an adjournment is taken now until to-morrow, July 24, 1915, at 10 o'clock, at the office of Frederick S. Lyon.) [481]

Office of Frederick S. Lyon, 504 Merchants Trust
Bldg.,

Los Angeles, Cal., Saturday, July 24, 1915.

This being the time and place to which the further taking of proofs on behalf of defendant in this case was continued, proceedings are now resumed.

Present: FREDERICK S. LYON, Esq., Solicitor
for Defendant.

RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

ARTHUR P. KNIGHT, recalled.

Cross-examination.

(By Mr. BLAKESLEE.)

Mr. BLAKESLEE.—Complainant objects to the receipt in evidence and consideration of Defendant's Exhibit Bole Patent, on the ground that it is not part of the art prior to Complainant's Exhibit Wilson's patent in suit, and cannot in any sense anticipate the same; that it is not within the pleadings in the case and cannot in any way tend to prove or disprove any of the issues raised on the pleadings and is, therefore, irrelevant, immaterial and incompetent. The use of the same in evidence merely for the purpose of showing what the witness Knight had before him

(Deposition of Arthur P. Knight.)

when testifying pertinent to such patent, is, however, not objected to.

Mr. LYON.—Defendant's Exhibit Bole Patent is offered in evidence solely for the purpose of showing the patent under which the defendant is operating in using in its type F reamer the slotted mandrel and single-piece key mounting, and for no other purpose.

Mr. BLAKESLEE.—We object to any statement of counsel of [482] the conclusion that the defendant is operating under any such patent. The patent speaks for itself in any disclosure it may make, comparative to the key for the holding of the spring of the type F reamer in evidence.

Mr. LYON.—I understand, however, that complainant is willing to concede that the defendant is operating under a license under said Bole patent.

Mr. BLAKESLEE.—We prefer not to concede anything as to this Bole patent, for reasons which will be made pointed in rebuttal in this case.

Mr. LYON.—In this connection defendant offers in evidence the enrolled papers including therein the Bill of Complaint, Subpoena *ad res.*, marshal's return, the defendant's Answer and the decree, in suit in equity No. 319, in this court, wherein Robert E. Bole and Edward Double were complainants, and the Wilson & Willard Manufacturing Company and Elihu C. Wilson were defendants.

Mr. BLAKESLEE.—We object to incumbering the record by these papers, and are willing to allow any portion of the records of this court pertinent

(Deposition of Arthur P. Knight.)

to any such controversy between Robert E. Bole and Edward Double and the complainant herein and the Wilson & Willard Manufacturing Company to be referred to on the trial of the present case with the same force and effect as though the said papers were in evidence, reserving, of course, our objection to the same on the ground of materiality. This objection, however, will not extend to such reading from such papers as may be permitted by the Court at the final hearing over the objection of complainant. This offer, however, is made upon the condition that similarly at the final hearing of this present case counsel for complainant may produce and read at the final hearing such copies of the record in the Patent Office pertinent to the controversy between the said Bole and [483] the said Wilson pertinent to the priority of invention of the subject of Complainant's Exhibit Bole Patent, if the Court will hear such proofs.

Mr. LYON.—Certified copies of any such records may be produced and be considered in evidence subject to the objection that any such records are incompetent, irrelevant and immaterial.

XQ. 35. (By Mr. BLAKESLEE.) Referring to Defendant's Exhibit Double Patent No. 3, do you find disclosed therein any dovetails upon the body of the reamer similar in use and purpose to the dovetails of Complainant's Exhibit Reamer Type F or in Complainant's Exhibit Improved Double Reamer or such dovetails as you find on the forks or prongs of Complainant's Exhibit Wilson Reamer?

A. No.

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XQ. 36. What is it in Defendant's Exhibit Double Patent No. 3 that guides or confines the upper ends of the cutters in collapsion and expansion thereof?

A. The walls of the central socket or chamber 2' engage the upper ends of the cutters to guide the same in collapsion and expansion.

Q. 37. That socket has an annular mouth continuous in formation, has it not?

A. The mouth of this socket is not annular, but is flattened on each side to fit the member 10.

XQ. 38. I call your attention to figure 4 of this patent and ask you whether that does not indicate a continuous annular orifice to this body portion 2 at the lower end thereof.

A. No, sir. This figure 4 shows the lower end of the body of a cut straight across the same to fit the lower end of the member 10 and the cutters.

XQ. 39. And simply produces inwardly contracted enlargements [484] of this annular mouth at 3-3'? Is that so?

A. The parts 3-3' are the walls of the open-sided slot 4, as shown in Fig. 1.

XQ. 40. In other words, they are the walls of the slotted extension? A. Yes.

XQ. 41. And not part of the body?

A. Well, they are part of the body in that they are rigidly connected with it.

XQ. 42. But there is no break, is there, in the periphery of this body figure 2 at its lower end?

A. No. From the specifications I should say that

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the body portion or the mandrel is supposed to extend to the lower end of the socket, and the extension constituted by 3-3' is below this body portion.

XQ. 43. That extension does not in any sense produce a collapsion or expansion of the cutters, does it?

A. No.

XQ. 44. And merely carries the block 10 and its connected parts by means of the pin 22? Is that it?

A. Also serves as a lateral support or guide for the cutters.

XQ. 45. And there are no dovetails upon those extensions or those portions upon that extension 3-3'? A. No.

XQ. 46. Nor do the cutters coast with that extension in collapsion and expansion to in any sense swing or tilt them, do they? ,

A. If you limit the term "extension" to the walls 3-3', no. But when the parts are assembled, the block 10 is rigidly connected with these walls 3-3' so that the whole may be regarded as an extension. [485]

XQ. 47. But the inward projection or shoulder 17 upon each of the cutters does not contact with that extension, does it, but only with the block 10?

A. It contacts only with the block 10, but I have just stated the block 10 in the broad sense is a part of the whole extension.

XQ. 48. In the sense that it is carried by it?

A. Yes; and is rigidly connected with it so that the whole operates as a unitary construction.

XQ. 49. But the cutters or shoulders 17 thereof do not contact with that portion of the body in the man-

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ner that the cutters contact with the body beyond the sides of the block in the type F reamer before us? Is that not correct?

A. No; there is no bearing contact beyond the sides of the block.

XQ. 50. The upward hollow extension 10' in this patent is a part of or an extension with respect to the block 10, is it not?

A. They are formed on the same part.

XQ. 51. As a matter of fact, are they not integral? A. Yes.

XQ. 52. And that extension forms the housing for the spring-actuated rod 6, does it not?

A. A portion of such housing.

XQ. 53. And that block 10 is transversely slotted to provide for a key 8 projecting laterally of the block 10 at the ends of the key and permit the key to play up and down in the block? Is that not correct?

A. Yes.

XQ. 54. Then this block 10 with its extension 10' is truly a hollow-slotted part at the lower end of the reamer body in the same sense that the part 6 in Defendant's Exhibit Double [486] Patent No. 1 is a hollow-slotted extension? Is that not true?

A. Functionally, yes; but structurally, it differs in that it is removable.

XQ. 55. When you remove the block 10 from Defendant's Exhibit Double Patent No. 3 you must of necessity remove the hollow-slotted extension? Is that not correct?

A. You remove that part of the hollow-slotted ex-

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tension which is constituted by the transversely extended member having the oppositely arranged parallel bearing-faces in the Double Patent No. 1.

XQ. 56. And that member is hollow and slotted in the same sense that the part 6 is hollow and slotted, namely, the part 6 of Defendant's Exhibit Double Patent No. 1 and for the same purposes? Is that not correct? A. Yes.

XQ. 57. And in Defendant's Exhibit Double Patent No. 3 there is substituted for the dovetails at the lower end of the body in Double patent No. 1 a bowl or open mouth with a hollow-slotted extension therein corresponding to the provision of the bowl or open mouth and hollow-slotted extension therein of Defendant's Exhibit O'Donnell & Willard patent. Is that not correct?

A. Your question would imply that the construction of the bowl and hollow-slotted extension in Double Patent No. 3 produced the same effect as the bowl and wedge member in the O'Donnell & Willard patent. This is not true, so I cannot answer your question in the affirmative.

XQ. 58. Is it not true in so far as that there are present in both Double Patent No. 3 and the O'Donnell & Willard patent an open mouth bowl-shaped lower reamer body end with a hollow-slotted detachable portion, or, in the same sense, extension therein, which latter accommodates in play a key or head supporting the cutters, and in which bowl or open mouth the [487] cutters are caused to expand or permitted to collapse as raised or lowered, due to the

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coaction of the cutters at their upper ends with the walls of such bowl or open mouth?

A. Yes, sir.

XQ. 59. Do you find the parts enumerated in the last question present in Complainant's Exhibit Wilson Reamer or Complainant's Exhibit Wilson Patent?

A. No, sir; this complete class of parts is not shown in the Wilson patent or Complainant's Exhibit Wilson Reamer.

XQ. 60. Do you find the same enumerated parts present in Complainant's Exhibit Wilson reamer or Defendant's Exhibit Wilson Patent, leaving out the qualification that the hollow-slotted extension or part is detachable.

A. No; for the reason that the bowl you refer to is not present in the Wilson patent nor Complainant's Exhibit Wilson Reamer.

XQ. 61. Please also answer the question last put pertinent to Complainant's Exhibit Reamer Type F substituted for the Wilson patent and the Wilson reamer.

A. This type F underreamer does not have the bowl referred to.

XQ. 62. Now, eliminating the limitation to such bowl element and returning to the hollow-slotted extension of the Double construction of Defendant's Exhibit Double Patent No. 1, in which dovetails or ways 9 are substituted for the bowl, inner walls to produce or permit expansion or collapsion of cutters, and still bearing in mind the presence in such

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Double Patent No. 1 of the hollow-slotted extension 6 which you have stated is analogous to the hollow-slotted extension 10-10' of Double patent No. 3, do you find such organization or construction present in Complainant's Exhibit Wilson Patent or Complainant's Exhibit Wilson Reamer? [488]

A. If you confine the expression hollow-slotted extension" to the transversely extending part of Double Patent No. 1, which is provided with the oppositely arranged parallel bearing-faces having the key-way 7, this part corresponding in construction to part 10-10' in Double patent No. 3, the Wilson patent and Wilson Reamer lack this structural feature. I do not, however, consider the term "hollow-slotted extension" as limited to this member, but as including all of the lower portion of the Double underreamer, and, therefore, including also the side portions thereof, so that in this sense the hollow-slotted extension carrying the expanding and spreading bearings is present in the Wilson patent and Wilson underreamer, as well as in Double Patent No. 1. In the specific sense, therefore, I would have to answer your question in the negative. In the broad sense, in the affirmative.

XQ. 63. But the parts 10-10' of Double Patent No. 3, which are detachable, perform the same function in that reamer as the part 6 described in Double patent No. 1 as the downward extension, performs in said latter Double patent? Is that not correct?

A. If you limit the part 6 to the transversely extending portion having the oppositely arranged

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parallel bearing faces, yes.

XQ. 64. And the same is true when you include in your last specification of features the slot in this extension 6 within which the key plays and the corresponding slot in the block 10 of Double patent No. 3? Is that not correct? A. Yes.

XQ. 65. And each of those parts, 6 and 10, has a hollow within which the spring-actuated rod plays, such hollow being or extending in a direction at right angles to the slot in which the cutters supporting the key plays? Is that not correct? A. Yes.

XQ. 66. In Complainant's Exhibit Wilson Patent and in [489] Complainant's Exhibit Wilson Reamer do you find any such clearly defined hollow and slot, one for the spring-actuated rod, and the other for the cutter-supporting head or key, as pointed out in the last question? A. No.

XQ. 67. Now, in Complainant's Exhibit Type F Reamer, do you find any such clearly defined slot and clearly defined hollow as last mentioned at the lower end of the body of the reamer, the hollow for the spring-actuated rod and the slot for the cutter-supporting head?

A. A slot for the key or tee-head may be said to be present; but the bore for the spring-actuated rod is of the full diameter throughout, so that it cannot be said to extend into this transversely extending portion as a definite element of construction.

XQ. 68. As a matter of fact, there is just one open space between the furcations or prongs at the

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lower end of the body of Complainant's Exhibit Reamer Type F?

A. This open space does not extend all of the way to the prongs. That is the reason why I said there was a slot. There is metal left at each side of the portion which corresponded to the transversely extending member having the oppositely arranged parallel bearing faces in the Double patent No. 1.

XQ. 69. But there is not in this Defendant's Exhibit Reamer Type F an intermediate or central portion containing both the longitudinal hollow and the transverse slot, is there?

A. No; only in the sense that the slot has been enlarged until the hollow becomes merged with it.

XQ. 70. And it is impossible, is it not, to draw a line of demarcation between the hollow and the slot? A. Yes, sir.

XQ. 71. As a matter of fact, in Complainant's Exhibit [490] Reamer Type F there are two spaced downwardly projecting portions in the place and stead of one downwardly projecting portion in Double Patent No. 1, were there not, leaving out of consideration for the present the detachable pin and plug which span the space between these downwardly projecting parts in the Type F reamer at the lower ends thereof?

A. If that plug were left out, yes.

XQ. 72. And the same is true of Complainant's Exhibit Wilson Reamer and Complainant's Exhibit Reamer Patent, is it not, if the bottom bowl 11, so numbered in the Wilson patent, is left out?

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A. Yes.

XQ. 73. And both Complainant's Exhibit Wilson Reamer and Complainant's Exhibit Wilson Patent on the one hand, and Complainant's Exhibit Reamer Type F on the other hand, have cutter-guiding dovetails, or the like, formed in or upon the faces of these downwardly ranging separate furcations? Is that not correct? Such dovetails or the like guiding the upper ends of the cutters in collusion and expansion thereof?

A. Your statement is correct as to the Wilson patent and the Wilson underreamer; but your reference to said portions of the type F underreamer as being separate furcations prevents me from answering the question directly in regard to this Type F. As constructed and assembled, the two side portions at the bottom of the underreamer body are so connected by the block that they are not separate portions or furcations, but operate together with the block in substantially the same manner as the complete downward extension of the Double Patent No. 1.

XQ. 74. The answer to the last question must be in the affirmative, must it not, assuming that the block and its carrying pin or bolt of Complainant's Exhibit Reamer Type F are removed? [491]

A. If the block at the lower end of Type F underreamer were removed the question could be answered in the affirmative.

XQ. 75. This block at its faces exposed to the coaction of the cutters conforms to the formation of

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the adjacent surfaces on the lower ends of these furcations or prongs? Is that not correct?

A. Yes; except that I do not admit that you can call these furcations or prongs when the device is in assembled or operative condition.

XQ. 76. The cutters of Complainant's Exhibit Reamer Type F in collapsing and expanding is the same, is it not, whether this block is present or removed?

A. It is, when there is no resistance to the movement, but in actual operation the bearing surface left, if this block were removed, would evidently not be sufficient to resist the strains as the cutter is drawn up into the shoe, for any length of time.

XQ. 77. Do you know that for a fact from observation of the use and operation of such a reamer as Type F, or is that merely a theoretical deduction?

A. I have never seen it tried. I cannot imagine any oil man trying it.

XQ. 78. You have no doubt, have you, but that the cutters of Complainant's Exhibit Wilson Reamer will expand and collapse over the lower ends of the prongs of that reamer under the working conditions met with in reaming? A. No, sir.

XQ. 79. Will you please point out why this is true and yet why you think that the cutters of Defendant's Exhibit Reamer Type F would not so collapse and expand with the block out, stating in your answer whether you find any material difference as between the amount of spreading surface at the lower ends of [492] the prongs of Com-

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plainant's Exhibit Reamer Type F with the block out, and the spreading surface at the lower ends of the prongs of Complainant's Exhibit Wilson Reamer?

A. The term "spreading surface" may be interpreted as meaning the bearing faces which hold the cutters apart in operative condition, whereas the bearing faces which engage with the shoulders on the cutters or bearing faces thereon to expand the cutters. Taking it in the latter sense, the bearing of the Wilson underreamer of the 4½ inch size which performs this operation is around the shoulder approximately 5⁄8 inch wide on each side, giving a total shoulder length of 5⁄4 inch. The bearing at any one time is only along a line of contact. In the Type F, as soon as the cutter has begun to expand the bearing is also only along the line of contact, which is approximately only ¼ inch on each side, giving for the two sides 2⁄4 inch length of contact as against 5⁄4 in the Wilson underreamer. Moreover, when the block is removed in the Type F underreamer, it leaves an undercut hollow back of this bearing portion so that it would be comparatively weak.

XQ. 80. Please answer the foregoing question limiting its statements to the transverse dimensions of the spreading surfaces in both reamers, and the spreading surfaces in the Type F reamer, including the parallel surfaces in Type F reamer upon which the cutters ride at their lower portions before entirely expanded.

A. The dimensions I gave were the transverse di-

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mensions. That is to say, the distance or width of bearing in a direction at right angles to the side faces of the cutters.

XQ. 81. And you make the total as $\frac{1}{4}$ inch on each furcation in the Type F reamer?

A. Approximately. [493]

XQ 82. That is not true, is it, when the full width of the lower ends of the cutters of the Type F reamer is disposed upon the parallel bearing faces?

A. You are talking now about what are called the spreading bearings in the Wilson patent or the oppositely arranged parallel bearing faces in the Double patent No. 1 which take the thrust in operation. I was talking about the bearings which produce expansion, which is simply an edge bearing at the lower end of these faces.

XQ. 83. Expansion takes place while the cutters of Defendant's Exhibit Reamer Type F are in contact with these parallel faces at the lower end of the reamer, before the cutter is entirely raised? Is that not correct? —due to the inward upward inclination of the ways of the dovetails on the furcations?

A. The last part of the expansion, yes.

XQ. 84. During this last part of the expansion are not the surfaces on the parallel bearing faces engaged by the cutters at the lower ends thereof of fully the same width found on the upper spreading surfaces of the prongs of Complainant's Exhibit Wilson Reamer?

A. At this time when these bearings on the bear-

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ing faces of the cutters ride up on the spreading bearings of the underreamer body, the bearing becomes a face instead of an edge bearing; and it is therefore necessary to consider at this time the area of contact. My measurements show that under these conditions the area of contact on the Wilson underreamer are approximately 2 inches long and $\frac{5}{8}$ inch wide on each side, giving a total area of $\frac{20}{8}$ square inches; in the type F, leaving out the block, the area would be, the lower portion, approximately, $\frac{3}{4}$ inch wide and $\frac{1}{2}$ inch long, and the upper portion approximately $\frac{1}{2}$ inch wide and $\frac{7}{8}$ inch long on each side, giving a [494] total area of approximately $1\frac{3}{8}$ square inches.

XQ. 85. But confining yourself simply to the lateral dimensions or simply the width of this lateral dimension or width of these contacting surfaces, isn't that as great in type F reamer as in the Wilson reamer?

A. As far as mere width goes, yes. As I stated, however, the bearing at this time is a face and not an edge bearing, so that width alone cannot be considered.

XQ. 86. The difference in the amount of metal in these contacting surfaces is a matter of degree, is it not, and may be predetermined as desired for strength?

A. Given the external diameter of the underreamer body and the size of the spring-operated rod and head of the block, which must then be used at the lower end of the body, and given certain strains which have to be met by the dovetails, it is not, in my

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opinion, true, that any size of these parts can be obtained, as the block must be of a certain size, and this limits the width of the bearing available.

XQ. 87. Supposing you eliminate the block. Is it not as possible to provide the desired necessary amount of metal at the lower ends of the furcations in the type F reamer as it is in the lower ends of the furcations of Defendant's Exhibit Wilson Reamer?

Mr. LYON.—Objected to as purely hypothetical, it not having been shown that the defendant corporation has ever at any time either made, used or sold any such reamer, eliminating the said block.

A. If the block were eliminated, these bearing faces on the type F underreamer body could be extended inwardly, provided it did not interfere with the withdrawal of the spring-actuated rod. If that were done, it would simply increase the area of the opposite parallel bearing faces remaining from the construction of Double Patent No. 1. [495]

XQ. 88. (By Mr. BLAKESLEE.) If now you remove from Defendant's Exhibit Double Patent No. 3 the detachable parts 10-10' with the hollow and slot you have referred to therein, or you remove from Defendant's Exhibit Double Patent No. 1 the part 6 with the hollow and the slot therein that you have referred to, you will still have remaining, will you not, guiding means for the upper ends of the cutters in collapsion and expansion the same as you have guiding means for the upper ends of the cutters in Complainant's Exhibit Wilson Reamer and Complainant's Exhibit Wilson Patent, and also in

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Complainant's Exhibit Reamer Type F with the block removed?

A. If the parts you refer to were removed from the Double Patent No. 3 and Double Patent No. 1, you would still have guiding means for engaging with the upper part of the cutters. And these would perform substantially the same functions as the upper bearing portions you refer to in the Wilson patent and in type F underreamer, as far as these functions alone are concerned.

XQ. 89. But if you remove these specified parts of the Double Patent No. 1 and from Double Patent No. 3, you will have no spreading bearings for the inwardly directed portions or faces on the cutters, will you, whereas in Complainant's Exhibit Wilson Patent and Complainant's Exhibit Wilson Reamer and in Complainant's Exhibit Reamer Type F with the block removed you will still have such spreading bearings at the lower ends of the furcations?

A. That is true, except that in the type F underreamer the spreading bearings you refer to remaining at the lower portion represent a portion of the same spreading bearings as in the Double No. 1 patent. So that you cannot say that in type F underreamer all of the transverse portions provided with these spreading bearings has been removed.

XQ. 90. But the part thereof with the hollow and the slot [496] as defined by you is not present in reamer type F upon such assumption of removal of the part 6 of Double patent No. 1? That is correct, is it not?

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A. No; that is not correct. It is partly present, being represented by the flat bearing surfaces at each side beneath the dovetail, this representing an unremoved portion of the transverse member of the Double patent No. 1 which ties the oppositely arranged parallel bearing surfaces.

XQ. 91. But the portions in such transverse part 6 with the clearly defined slot and clearly defined separate hollow, are removed from such reamer type F, are they not?

A. Such central portion of this transverse part has been removed; yes.

XQ. 92. And with the block eliminated there remain but two distinct entirely spaced prongs as in Defendant's Exhibit Wilson Reamer and in Complainant's Exhibit Wilson Patent. Is that not correct—with the block removed?

A. With the block removed, yes.

(By consent of counsel for both parties an adjournment is now taken until Monday, July 26, 1915, at 10 o'clock A. M., at this same place.)

Office of Frederick S. Lyon,
504 Merchants Trust Bldg.,

Los Angeles, Cal., Monday, July 26, 1915,
10 o'clock A. M.

This being the time and place to which the further taking of proof on behalf of the defendant was continued, proceedings are now resumed. [497]

Present: FREDERICK S. LYON, Esq., Solicitor for
Defendant.

RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

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ARTHUR P. KNIGHT, recalled.

Cross-examination (Resumed).

(By Mr. BLAKESLEE.)

XQ. 93. Will you please state whether from your knowledge of the use of oil well tools such as underreamers, such as that knowledge may be, or from any other consideration, there is not present in Complainant's Exhibit Type F enough metal upon the lower end of the reamer body properly disposed or massed to cause expansion of the cutters without any danger of disruption, distortion, crushing or other failure, bearing in mind that this expansion of the cutters is preparatory to reaming operations, and that the crushing strains imposed upon the cutters occur during reaming operations.

A. In this connection the only criterion I have is the relative length of this bearing, which amounts to about 1-inch in length, all told, against the total length of bearing of 3-inches when the block is in, indicating that if the tool is properly designed to give the right amount of bearing for this operation both in the expanding and collapsing, then the amount of bearing left when the block is removed would not be sufficient. I would also say in this connection that it seems to me that the pressure on these parts when collapsing must also be considered, as well as the pressure in expansion, this pressure being due to the inward pressure of the shoe on the casing, pressing the bit inwardly and causing it to ride over these parts with considerable force.

XQ. 94. But as the lower end of the reamer body

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in effect retreats from the cutters as they are collapsed inwardly towards [498] each other, can there be any danger of failure of the metal at the lower part of the type F reamer with the block omitted, to stand up under such pressure as they occur incidental to such collapsion of the cutters?

A. Whether there can or not, I am unable to say. I can only judge from the construction of the tool that the ability to withstand such pressures would be small compared to that which it is designed for.

XQ. 95. Are you prepared to say that the metal at the lower part of the body of the reamer type F does not constitute, even with the block out, a substantial and strong wedge, for use in the collapsion and expansion of the cutters as they ride over such wedge, bearing in mind that the cutters are not assumed to be working or reaming when they are being collapsed or expanded?

A. I would not call it a substantial, strong wedge, inasmuch as its strength is a small portion of the device as actually constructed and assembled. In so far as it has any strength, however, it is that of the corresponding part in the original Double No. 1 patent, this part being that which remains after the enlargement of the slot in the transversely extending portion so as to leave only a portion of the oppositely arranged parallel bearing surfaces on each side.

XQ. 96. But it is not those oppositely arranged parallel bearing surface which take the brunt of this collapsing and expanding action, is it?

A. Not during the major portion thereof, except

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at its extreme end—the edge at the extreme end—which edge takes the brunt of this action both in the Double No. 1 and this type F.

XQ. 97. And that edge is backed up by all of the metal of the body of the reamer substantially lengthwise of the body, is it not?

A. Yes; in both cases, in a lengthwise direction.
[499]

XQ. 98. Is there any doubt in your mind but that the metal at the lower part of the body of the type F reamer with the block omitted is sufficiently proportioned and disposed to resist any inward crusing effect or any stresses occuring in reaming operations and imparted to the body through the cutters? That is, when the cutters are fully expanded.

A. You mean without the block?

XQ. 99. Yes; the question included that—without the block.

A. The total bearing surface for each cutter, according to my measurements, for this size reamer, is about $3\frac{1}{4}$ square inches when the block is in. The area of the bearing surfaces when the block is removed is approximately one $\frac{3}{8}$ th of a square inch, or just about one-half of the total area of what it is when the block is in. If, therefore, the tool were properly designed to get the required amount of bearing area for the underreamer operations with the block in place, you would only have about one-half of the required amount when the block is removed. Whether this one-half of the amount for which the tool was built would be sufficient in

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practice for the tool to operate at all, I cannot say. But it is self-evident that the tool would not last as long with only half of this amount of bearing. I have, therefore, strong doubts whether the bearing surface left after the block is removed is sufficient for the purpose stated.

XQ. 100. Bearing in mind that the cutters when in use are braced inwardly toward each other in this reamer type F with the metal at the lower end of the body of the reamer interposed between the cutters, is it your opinion that under any circumstances the stresses of reaming would cause the reamer to fail at the lower end of the body and break down such metal interposed between the cutters?—Assuming that the metal was of the [500] proper hardness to stand the wear and tear as it is customary in the use of oil well tools for heavy service.

A. I should say that when unfavorable conditions, such as when the underreamer is encountering hard rock and becomes wedged in during its descent between converging boulders, for example, it is quite possible that these said portions of the oppositely arranged parallel bearing faces left in the original Double reamer and in this type F reamer and unsupported by the block, would become sheared off. Moreover, the operation of the underreamer involves repetition of the strains, and even if these surfaces would withstand the pressure of one operation, it is extremely doubtful if they would hold up under the strains of repeated pounding in the underreaming strokes. As I have stated before, however, the best

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criterion as to this is the fact that they must consider it necessary to have all of this bearing surface, and, therefore, the removal of about half of it would presumably not leave sufficient for the purposes for which the tool was designed. These tools are built within close limits of external dimensions, and are used under extremely heavy strains, and it stands to reason that the designer will get all the bearing surface he can so as to get the maximum length of life out of the tools. And any diminution of the bearing surface would, in general, diminish the length of life and the reliability of the tool just that much.

XQ. 101. Have you ever seen an underreamer like Complainant's Exhibit Type F in use or about a rig after it has been used?

A. I don't know whether I have or not. I have seen a great many Double underreamers, but whether I have seen this particular type F in use I do not know.

XQ. 102. Do you know of your own knowledge whether or not, as a matter of fact, the block of this reamer type F is used in the reamer in actual operation? [501]

A. If by "knowledge" you mean experience, no.

XQ. 103. You use "experience," I presume, in the broad sense? A. Yes.

XQ. 104. Is it your opinion or knowledge that continued use of a reamer like Complainant's Exhibit Wilson Reamer would produce any shearing or crushing of the lower ends of the prongs where

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they are disposed between the bearing shoulders on the cutters when expanded?

A. In the Wilson cutter where the bearing surfaces on the prongs are of sufficient area to withstand these crushing strains, the operation of the under-reamer does not, of course, crush the prongs, although there is some wear. I do not, however, know that under all circumstances the Wilson prongs are sufficient to stand this crushing pressure.

XQ. 105. There is a distinct difference between crushing effect and a shearing effect in mechanics, is there not?

A. Every crushing strain involves lateral distortion and, therefore, involves sliding movements of the particles of material on one another, such sliding movements in the direction of the plane between the particles constituting shearing strains. "Shearing strains" is a more limited expression. On the other hand, it may occur with both crushing and tensile strains.

XQ. 106. In a shearing action what is the direction of movement of the severed or redistributed particles?

A. As I have said, an action or movement in opposite directions along the plane of contact between the particles, as distinguished from a movement toward one another in crushing or moving away from one another in tensile strains or action, the shearing strains being the movement of the particles in parallel planes.

XQ. 107. If an object is crushed between two

(Deposition of Arthur P. Knight.)

other objects. [502] the particles crushed do not move oppositely in parallel planes, do they?

A. Not if the crushing motion is such as to flatten out the object between without causing it to bulge, for the property of metal is such that in general there is a bulging action of some part involving a shearing strain.

XQ. 108. But in general, the particles that are squeezed so to speak, in the last case, do not move in opposite directions in parallel planes, do they?

A. In the start of a straight crushing stress they expand laterally and contract longitudinally. That is in the direction of the crushing pressure.

XQ. 109. Now, as to the portions of the metal at the lower end of the body of the reamer type F which are directly interposed between the cutters and as to which there is a crushing pressure exerted directly between such cutter portions, can it be properly said that any shearing action can possibly take place as to these interposed metal portions, due to any stress encountered in using this reamer type F?

A. Yes; in my opinion the crushing action would include a shearing action, for the reason, first, that the portion at the inner edge is undercut, leaving therein the overhanging portion unsupported and subject to shearing strain; and, second, that the crushing action extends only part way toward the outer edge of the metal, so that the portion of the cutter which bears on this face would act like a shaping tool driven into the face of metal near an edge thereof and cut down through the same, squeezing

(Deposition of Arthur P. Knight.)

the metal down and inwardly, if the pressure is sufficiently great. The metal being unsupported on its inner face will give mostly in that direction, and as it is pressed down by engagement of the cutter it would be sheared from the outer portion which is not so engaged. [503]

XQ. 110. There is part of the metal defined in the last question which is not interrupted in its pronation from cutter to cutter irrespective of the undercut you speak of, is there not?

A. That is quite true, and I intended by my answer that it should apply to this, although I may not have made it quite clear. In the crushing action of this portion of the metal said portion will be cut away from the portion of the underreamer body which extends beyond the cutter on each side, so that it will be sheared therefrom.

XQ. 111. And in order to completely shear it therefrom it would be necessary to compress such removed metal completely along the whole line of cleavage, would it not, and squeeze it out, as it were, side ways, from between the cutters?

A. Quite so. But as soon as this shearing action had proceeded a little ways, the tool would be useless, in my opinion.

XQ. 112. Do you think that any such compressing and partial shearing action would occur prior to breakage across the shank of one or both of these cutters of this reamer type F?

A. I should say it would be quite possible, especially with repeated recurrence of the impact.

(Deposition of Arthur P. Knight.)

XQ. 113. Do you know that the block of Defendant's Exhibit Reamer Type F was designed for the purpose *per se* and primarily for entering at all into the expanding or contracting action or taking any of the stresses incident to reaming?

A. Testifying as an expert, I would say that I do know it, for the reason that it is located and constructed and arranged for such purpose. Moreover, I notice from an inspection of this block that there has been effective contact with the cutters to some extent therewith.

XQ. 114. You don't know whether that was intended or merely incidental so far as the designing was concerned, do you? [504] In other words, your observation has followed merely because you find that block as part of this exhibit? Is that not correct?

A. What the intentions of the man who built this were, I don't know. I can only judge from the obvious effect of the construction.

XQ. 115. Are you prepared to say as a matter of fact that Complainant's Exhibit Reamer Type F could not be used without a block to produce the expansion and collapsion of the cutters and also to act satisfactorily as a reamer in operation?

A. I couldn't say that it could not be done, because I have not seen it tried. On the other hand, I can say that if it was done it would not be operating as a whole in the manner in which the type F reamer operates as a whole. It would present a partial embodiment of the type F operation, and whether such

(Deposition of Arthur P. Knight.)

partial embodiment would be operative or not in practice, I am not able to say.

XQ. 116. Is there any doubt in your mind as to the operativeness of Complainant's Exhibit Wilson Reamer? A. No, sir.

XQ. 117. Is it not then hard to draw a positive line of discrimination between the admitted operativeness of the forked Wilson reamer and any assumed inoperativeness of the forked type F reamer with the block removed?

A. I do not think so. In the first place, the Wilson reamer was designed as a forked reamer, and the bearings were intentionally and obviously made sufficient for the purpose of underreaming on the respective forks, without requiring any central bearing. The type F underreamer is provided with bearing faces which correspond, including the block, to those on the Double No. 1 patent, and are properly proportioned and designed, including such block to operate in withstanding underreaming [505] strains, and are not proportioned and designed to provide bearing surfaces on any prong sufficient to withstand the underreaming strains. I can only judge the structure and design of the type F underreamer as complete and assembled, and, therefore, I must conclude that if a material portion of the bearing surfaces therein were removed, there is no presumption or knowledge that the device would be operative, when my only knowledge has been that it has been only operated in a complete and assembled

(Deposition of Arthur P. Knight.)

form. On the other hand, the Wilson underreamer is, to my knowledge, operative and it is operative because it is used in its complete and assembled form.

XQ. 118. Do you, or not, find upon Complainant's Exhibit Type F and on the prongs thereof, bearing or spreading surfaces and surfaces taking the inward thrust if the reamer is in use, in addition to those on the detachable blocks and in addition to those found in either of defendant's exhibits, Double Patents Nos. 1, 2 and 3?

A. While I do not admit that the side members at the bottom of the underreamer type F can properly be called prongs, since they are united unitarily by the block when the device is in operating condition, yet, using this term only for the purpose of identification, I would say that the portion of the bearing at the back of the cutter and of the underreamer body which engages said bearing at each side, comprises a space approximately one-half inch long and one-quarter inch wide, which may be said to be on these parts identified as prongs rather than on the portion which can be identified as the remaining portion of the transverse member in the original Double patent No. 1 containing the oppositely arranged parallel bearing surface. This gives a bearing surface of about $\frac{1}{4}$ of a square inch for each cutter represented by this portion. [506]

XQ. 119. In this last answer you are leaving out the portions of the metal at the lower end of the body which is forked with the block removed, which are overhanging portions on the ledges, are you not?

(Deposition of Arthur P. Knight.)

A. Yes. I am leaving out all that portion which extends from the inner edge of each side to the walls of the dovetails.

XQ. 120. Namely, you are leaving out what you have heretofore contended to be remnants of the hollow-slotted extension such as shown in the Double patents under discussion, assuming that there had been such hollow-slotted extension present, and it was removed, all but these remnants. Is that correct?

A. Except that the term "hollow-slotted extension" I have used in a broader sense as including all of the lower end of the Double underreamer, and I have defined the parts you refer to as the transversely extending member having the oppositely arranged parallel bearing surfaces.

XQ. 121. You also find, do you not, spreading surfaces at the lower ends of these forks using the term in conjunction with the motion of the block, which spreading portions are in addition to anything disclosed in the three Double Patents, Defendant's Exhibits? Is that not correct?

A. No; that is not correct for the brunt or nearly all of the bearing action. It is only correct so far as it relates to the very last part of the bearing action wherein the tapered dovetails produce the final stress.

XQ. 122. And in this last answer you are still eliminating the portions which you conceive of as being remnants of the transverse extension found in the Double patent? A. Yes, sir.

(Deposition of Arthur P. Knight.)

XQ. 123. Now, inasmuch as you admit that upon the prongs of this type F reamer, forming a prong in conjunction with the [507] elimination of the block, there are bearings which are not present in the disclosure of either of the three Double patents in evidence, is it not merely a matter of proportion as between the areas of these spreading and inward thrust bearings and the spreading and inward thrust bearing of Complainant's Exhibit Wilson Patent and Complainant's Exhibit Wilson Reamer? In other words, adopting your finding that these spreading and in-thrust bearings of the type F without the block would not stand up in service, is it not a matter of degree as between the dimensions of such surfaces and the dimensions of the in-thrust and spreading surfaces on the prongs of the Wilson Exhibits, when it comes to the consideration of such surfaces performing all of the service?

A. No, sir, for two reasons: First, the type F underreamer requires for the beginning and main part of the expanding action the engagement of the shoulder on the inner face of the cutter with the bearing portion on the lower end of the lower end of the underreamer body. And the bearing faces I have referred to as additional to the bearing faces in the No. 1, 2 and 3 Double patents, could not come into operation until the expansion has been sufficiently completed. Therefore, the type F underreamer would not be operative with the cutters therein if you rely only on these supplementary bearing surfaces. Secondly, the locating of all the

(Deposition of Arthur P. Knight.)

bearing surfaces on the prong in the Wilson underreamer is related to a special mode of operation of such underreamer involving the collapsion of the shanks of the cutters into an open space between the prongs, the provision of this open space necessitating the location of all the bearings on the prongs. Whereas in the type F underreamer the location of a portion of the bearings on the prong is simply incidental to the widening out of the cutters and does not in any way enable the shanks of the cutters to collapse between the prongs, [508] for the reason that bearing surfaces and, indeed, the major portion of the bearing surfaces, are still left between what you have called prongs, and would prevent any such mode of operation. Therefore, it is not merely a matter of proportion of the parts, but a matter of difference in location of the bearing surfaces, to provide in the Wilson patent a different mode of operation.

XQ. 124. In both instances, however, in the type F and the Wilson, surfaces for taking the inward thrust in reaming and surfaces for causing and permitting expansion and collapsion are present upon the forks, are they not, using the term "forks" in connection with the type F reamer in connection with the elimination of the block?

A. To the extent I have above indicated, and with the qualifications which you suggest as to the arbitrary definition of these numbers of forks. They are not, however, forks or prongs in the same sense as they are in the Wilson patent.

(Deposition of Arthur P. Knight.)

XQ. 125. Are they not forks or prongs in the same sense when the block is removed irrespective of particular design?

A. I do not so consider them, for the reason, as I have stated, that under these conditions they do not form such spaced bearing supports at either side of the cutter as to permit the shanks of the cutter to collapse between the prongs or forks as in the Wilson patent.

XQ. 126. But the cutters are, as a matter of fact, in both reamers in part disposed between these forks and prongs in collapsing and expanding when in use?

A. But the expression "prongs" or "forks" is used, as I take it, in the Wilson patent, as an idea of providing a central clear space within which the shanks may collapse more fully than they could if they were occupied by metal. And in this special sense type F underreamer does not show forks or prongs.

XQ. 127. Do you take it as an advantage in the Wilson [509] reamer that this closer approach and more pronounced collapsion of the cutters takes place?

A. It enables a different kind of a shank to be used, namely, a straight instead of a cut-away shank. Whether the advantages of this construction outweigh the disadvantages, of any, I am not prepared to say.

XQ. 128. You do not know of any disadvantages do you, in other respects, attaching to the Wilson reamer? A. I cannot say that I do.

(Deposition of Arthur P. Knight.)

XQ. 129. Now, putting aside for a moment your interpretation of the structure of these separated portions or branches of the body extending down to the lower end of the body of the type F reamer, with respect to the inwardly projecting portions, which you say are remnants of the transverse extension of the Double patent reamer, and treating them merely as adjuncts or parts of these branches or forks of the body, with the block removed, is it not true that in this type F reamer there are portions of these forks or branches with which the cutters coact both in collapsing and expanding and also for transmitting the inward thrust in reaming?

A. Yes, with the qualification that the term "forks" and "branches" that you use,—that they are not forks in the sense used in the Wilson patent, for the reason that the bearing surface you refer to would prevent the collapsing of the cutters in the manner set forth in the Wilson patent.

XQ. 130. But, however, that collapsion and expansion occurs in both instances, does it not, only in a different procedure in one case from that in the other, namely, a different course of motion of the cutter part?

A. Yes; and this difference in course of motion of the cutter parts is the very thing the Wilson patent is aiming at, [510] namely, the entry of the shanks of the cutter more fully between the prongs or side-members of the body.

QX. 131. And in that respect there is a clear distinction, is there not, between the mode of collapsion

(Deposition of Arthur P. Knight.)

and expansion of the cutters of Defendant's Exhibit Double Patent No. 1 and the mode of collapsion and expansion of the cutters of Complainant's Exhibit Wilson Patent and Complainant's Exhibit Wilson Reamer?

A. There is a clear distinction as to the particular mode of collapsion, but the general mode is the same in each case. The Wilson patent involves a special location of the bearing surfaces whereby the central portion of the underreamer is left free and clear for the entry of the shanks of the cutters. And in so far as the cutter shanks move in this particular manner between the prongs, there is a particular difference in the mode of operation, the general mode of the tilting and sliding of the cutter being, of course, the same.

XQ. 132. In so far as these portions of the lower prongs or forks or subdivisions of this type F reamer are concerned, with the block removed, namely, the portions with which the cutters coact in collapsion and expansion and to take in-thrust, they coact in the same manner with the cutters and produce the same results, do they not, as the corresponding faces of the block when the block is interposed between these subdivisions of the body or prongs?

A. Yes; I should say so.

(By consent of counsel for both parties an adjournment is now taken until 2 o'clock P. M., of this same day at this same place.) [511]

(Deposition of Arthur P. Knight.)

Office of Frederick S. Lyon, 504 Merchants Trust
Bldg.

Los Angeles, Cal., Monday, July 26, 1915.

2 o'clock P. M.

This being the time and place to which the further taking of proof on behalf of defendant was continued, proceedings are now resumed.

Present: FREDERICK S. LYON, Esq., Solicitor
for Defendant.

RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

ARTHUR P. KNIGHT, recalled.

Cross-examination (Resumed).

(By Mr. BLAKESLEE.)

XQ. 133. In the detachable block of reamer type F, when the same is in position for use, do you find that there is any hollow or slot?

A. There is a hollow through the block, or hole bored there through, for a bolt.

XQ. 134. The hollow is not there when it is filled by the bolt? A. No, sir.

XQ. 135. Then to all intents and purposes your bolt and the block constitute together a solid part in which there is no hollow or slot? Is that not correct?

A. They constitute a solid part in the same sense as the block constitutes a solid part with the rest of the underreamer body.

XQ. 136. Well, without comparison, will you please state whether or not it is a fact that the bolt and block when assembled in the reamer constitutes in effect one solid part or a part [512] in which

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there is no opening, whether hollow or slot?

A. Yes.

XQ. 137. Does this block when in position with the bolt which passes through it and holds it in any sense tend to produce or provide in reamer type F a body provided with an extension having a definitely defined slot and a definitely defined hollow, the former to be traversed by a cutter-holding part and the latter to be traversed by a spring-actuated rod?

A. As I have said before, the channel formed by enlarging the slot in the original Double No. 1 patent as in type F may be said to form a slot, and in that sense this block forms the bottom of that slot. The hollow, however, which you referred to, cannot be defined in this type F, and, therefore, the block has nothing to do with it, this hollow merging with the slot in this type.

XQ. 138. And constituting when so merged merely an open space between the prongs which at the bottom are united by the bolt carrying the block? Is that not correct?

A. An open space between the upper portions of the members you refer to, yes.

XQ. 139. And the space is continued between the portions of these prongs excepting where the block is interposed between them, is that not correct?

A. There is a question there as to the meaning of the word "prongs." The space you referred to is only continuous between the walls of the enlarged slot, and does not extend to the prongs proper in the sense in which I understand the term, a portion of

(Deposition of Arthur P. Knight.)

this space being occupied by the remaining portion or remnant of the transverse member of the Double Patent No. 1, which projects into the space between the side members. [513]

XQ. 140. But, nevertheless, this is all one open uninterrupted or unbroken space bounded by the separated terminal portions of the body, by the block, and by the lower wall of the main body of the reamer, whatever names may be given to these parts?

A. Yes, sir.

XQ. 141. Will you please state why you term these inwardly projecting ledges in the type F reamer being opposed to each other at the inner faces of what I have called prongs, remnants of the transverse extension, when there is no suggestion of any such transverse extension in this exhibit.

A. Because comparing these with the Double Patent No. 1 it was apparent to me that these parts corresponded in position and mode of operation to the corresponding portions in the said transverse extension in the Double Patent No. 1.

XQ. 142. Then why do you take it that the transverse extension, or, as you put it, the remainder of it, if the definitely provided hollow and slot, are omitted in this type F reamer?

A. I do say that the transverse extension is probably cut away in the manner stated, leaving a portion in place, and the reason for this I take to be connected with the method of assembling the parts, particularly the spring-operated rod.

XQ. 143. In other words, it permits assembling

(Deposition of Arthur P. Knight.)

from the open mouth at the bottom of the remnant, does it not, instead of necessitating the use of a "sub" similar to the joint member 2 of Double No. 1? Is that correct?

A. Yes; it permits of this method of assembling, and, in that respect, is similar to Double Patent No. 3.

XQ. 144. But such method of assembling is not possible in using a reamer constructed in accordance with Double Patent No. 1, is it? [514]

A. Not so far as I can see.

XQ. 145. Why do you take it in the designing of type F reamer, all of the means upon the body or the lower end thereof co-operating with the cutters in expansion and collapsion thereof, and taking the inward thrust of the cutters, was so disposed or mounted or arranged as to be capable of withdrawal from the body of the reamer at the bottom thereof as are such features capable of withdrawal in Double Patent No. 3; in other words, why were some parts of those means permitted to remain upon the body of the reamer in F at the lower end thereof?

A. I should say this was mainly on account of the adaptation of the Bole device to the Double under-reamer, rendering the presence of the spring support furnished by the upper end of the removable member in Double No. 3 patent unnecessary.

XQ. 146. But in adapting this so-called Bole device, namely, the key support for the springs, to this type F reamer, the pin or member 22 of the Double Patent No. 3 was in effect retained, was it not, to

(Deposition of Arthur P. Knight.)

hold in position the block? A. Yes, sir.

XQ. 147. And, therefor, what did the use of this so-called Bold spring-holding key have to do with proportioning the removable block and determining what parts of the spreading and in-thrust bearing surfaces should be withdrawn with or on such block?

A. I see now that you are referring more to the elimination of the bearing portion than the support at the upper end. In this connection, the only reason I can give for the variation in this type F from the Double No. 3 is that it is found unnecessary to cut away so much of the original Double No. 1 construction as is indicated by this Double No. 3, and they therefore left the device more nearly like Double No. 1 and simply cut away just enough to permit the spring-supported rod to slip down when the block is removed. [515]

XQ. 148. And in so doing they apparently thought best to leave upon the body and upon what with the removal of the block constitutes spaced forks or subdivisions or prongs of the body, parts in actual effect when in use either with or without the block, to cooperate with the cutters in the expansion and contraction of the same, and also taking the in-thrust of the cutters. Is that not correct?

A. Yes, but in so far as these same parts were left and performed their functions, they perform these functions in the same manner as they did in the Double Patent No. 1.

XQ. 149. And they extended the parts upon the lower subdivided end of the body of the reamer, did

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they not? That is, extended them laterally and also extended the cutters laterally to co-operate with these extended parts of the body?

A. Yes; and this same lateral extension or the equivalent thereof is shown in Double Patent No. 2 and has exactly the same effect as the wide bearing on the back of the Swan and the O'Donnell & Willard cutter.

XQ. 150. Now, that extension in Double Patent No. 2 is for the specific purpose of furnishing a secondary pair of flanges or lugs or dovetails, as we call them, 10, to co-operate with grooves 15, to prevent the cutters from breaking, does it not, in contradistinction to providing extended bearing surfaces on the cutter for use in expansion and collapsion?

A. Double Patent No. 2, page 1, lines 77 to 82, are as follows: "Each slip is provided with a pair of elongated lugs 10 which lie as near the cutting edge as possible and extend longitudinally of the slip and project laterally from the sides thereof as shown best in figure 5"; and in lines 35 to 39 it is said: "Another advantage of my invention is to provide for strengthening the slips at a point as near their cutting edges as [516] possible so as to relieve the weak portion of as much stress as possible." From these two statements I take it that the main function of these laterally extending lugs 10 which are as near the cutting edges as possible, and which extend out as far as the sides of the connecting portions proper and beyond the main body of cutters, was to furnish a lateral support in addition to that

(Deposition of Arthur P. Knight.)

given at the back of the body of the cutter so as to give a bearing for support of substantially as great a width as the main connecting portion proper. The fact that these lugs 10 were overlaid by the dove-tailed flanges on the body, simply furnished an additional support on their upper faces but in no way detracted from the support given by their lower or inner faces.

XQ. 151. Those lugs 10 as pointed out in lines 42 to 45 of page 2, and in lines 12 to 21, inclusive, of page 2, are shown to be intended to be serviceable specifically when within the grooves 15, are they not, and is it not true that this is the only way or the only place of use for such lugs pointed out in the specification of this patent? A. Yes.

XQ. 152. Now, those lugs, furthermore, are not on the cutting ends of the slips or bits in Double Patent No. 2, are they? In other words, there is a definite space between their zone and the zone of such cutting ends? Is that not correct? A. Yes, sir.

XQ. 153. Therefore they do not provide any further stock at the cutting end of the bits, which stock can be utilized in dressing out the cutters and which provides a greater cutting edge for the cutters? Is that not correct?

A. Yes; and the same is true, it seems to me, with the widened bearing portion on the back of the type F cutter.

XQ. 154. That widened portion of the back of the type [517] cutter is on the mass of metal which includes the cutting edge, is it not?

(Deposition of Arthur P. Knight.)

A. Yes. But if the tool were dressed up to this limit it would hardly be serviceable, and I cannot contemplate any such extreme cutting back of the cutting edge until it is within less than half an inch of the upper end of the cutting portion.

XQ. 155. That may all be, but there is no diminution of the width of the cutter from the zone of that broadened bearing portion right down to the cutting edge, is there? A. No, sir.

XQ. 156. And that is true in the cutters of Complainant's Exhibit Wilson Patent and Complainant's Exhibit Wilson Reamer, referring to the shoulders on the head end which co-operate with the prongs?

A. Yes; and that is true to possibly a greater degree in Double old-style underreamer cutter No. 2. I rather think, so far as there being any diminution, there is an increase in width from this widened dove-tailed portion down over the cutting portion proper.

XQ. 157. But in none of the old-style Double cutters do these lateral enlargements of the bearing surfaces come out to the full width of the working end of the cutters, do they?

A. In the old-style Double No. 3 they are substantially the full width.

XQ. 158. And likewise, in old-style Double cutter No. 3 there is a definite space between this narrowing surface of the cutter and the cutting end of the cutter, is there not, as indicated by the notches in the formation? A. Yes, sir.

XQ. 159. It is likewise true of the cutters of Complainant's Exhibit Improved Double Reamer and

(Deposition of Arthur P. Knight.)

Cutters that the bearing surfaces [518] on the inner faces of the cutters are the full width of and are formed upon the mass of metal constituting the cutting ends of the cutters? Is that not correct?

A. Yes.

XQ. 160. And that is likewise true of the cutters of Complainant's Exhibit Defendant's Reamer Types D and E? Is that not correct?

A. Yes; this extreme width being applied to the spreading out of the back of the cutters as well as to the cutters in both these exhibits, similarly to what it is in the O'Donnell & Willard patent.

XQ. 161. In the Defendant's Exhibit O'Donnell & Willard patent, you find present simply a single shoulder, do you not, which shoulder co-operates with the shoe on the casing to cause the collapsing of the cutters, namely, the shoulder defined by the drawing as shoulder 15 or the shoulder 15', and which likewise thereon contacts with the lower end of the stock when the shank of the cutter is fully seated in the socket? A. Yes.

XQ. 162. Now, is it not true that among the exhibits before you of Double reamers or defendant's reamers and the three Double patent exhibits, you find the various examples of cutters of Double reamers having laterally extended bearing surfaces of a width equal to the cutting ends of the cutters, and provided upon the cutting end portions of the cutters, such extensions carrying the width of such bearing portions beyond the planes of the sides of the shanks of the cutters, not in the three exhibits

(Deposition of Arthur P. Knight.)

of Double patents, but rather in the reamer exhibits, such as Complainant's Exhibit Improved Double Reamer and Cutters and the Double Reamer Exhibits D, E and F, excluding defendant's Exhibit Old Style Double Cutters Nos. 1, 2 and 3?

A. I can only say that if I were passing on a claim like [519] that in the Patent Office or a claim of a feature like that in the Patent Office, I would certainly reject it on the Double Old Style Cutter No. 3 as the extension of the upper surface is on the cutting end of the cutter body, and is of substantially the full width of the cutting portion. True that the bearing surface is not directly back of the widened portion of the cutter, but is slightly above the same. But it answers the definition you give.

XQ. 163. I don't think that my question admits of that distinction, and, furthermore, I am not attempting to determine what your qualifications were as an examiner in the Patent Office. I believe the answer is not responsive, and that the question can be answered yes or no as it relates to certain specific showings and structures, and I will ask you please to answer it yes or no.

A. I will have to answer your question in the negative, for the broad use.

XQ. 164. And why?

A. Because the widened bearing surface on the No. 3 Double cutter is on that portion of the cutter body which is nearer the cutting end than it is to the other end, and is substantially the full width of the cutting portions, and, therefore, I consider that it is on the cutting end.

(Deposition of Arthur P. Knight.)

XQ. 165. Now, will you please answer the second question before the last on the record, leaving out of consideration in its entirety Defendant's Exhibits Old Style Double Cutters Nos. 1, 2 and 3?

A. What else did it include?

XQ. 166. The question speaks for itself and may be read to the witness if he desires.

(The question as reread, and covering the modification in counsel's last question, is read by the reporter as follows: "Now, is it not true that among the exhibits before you of Double [520] Reamers and Defendant's Reamers and the three Double Patent Exhibits, you find the various examples of cutters of Double reamers having laterally extended bearing surfaces of a width equal to the cutting ends of the cutters, and provided upon the cutting end portions of the cutters, such extension carrying the width of such bearing portions beyond the planes of the sides of the shanks of the cutters, not in the three exhibits Double patents, but rather in the reamer exhibit such as Complainant's Exhibit Improved Double Reamer and Cutters, and the Double Reamer Exhibits "D," "E" and "F"?)

A. I find the construction you refer to in the Double Exhibits "D," "E" and "F," and also in the broad language used in the Double patent No. 2, which is included in the question.

XQ. 167. And in Double Patent No. 2 do you find such extensions of such bearing surfaces on the cutters and entirely a part of and not in any way separated from the cutting end portions of the cutters?

(Deposition of Arthur P. Knight.)

A. If you mean by "cutting end portions" the widened portions at the lower end, no.

XQ. 168. And do you find such cutter formations in either of the cutters Defendant's Exhibits Double Old Style Cutters Nos. 1, 2 or 3?

A. Not with your last limitation.

XQ. 169. And in each of the exhibits Double Reamers Types "D," "E" and "F," and Complainant's Exhibit Improved Double Reamer and Cutters, do you not find definitely laterally extended bearing surfaces upon the bodies of the reamers with which such definitely laterally extended bearing surfaces on the cutters co-operate in expansion, collapse and imparting of inward thrust?

A. Yes the expansion of the bearing faces on the body co-operates with the widened cutters corresponding to the expanded [521] bearing faces on the body of the O'Donnell & Willard patent, except that in the O'Donnell & Willard patent it is carried to the side of the body on each side, whereas in the types D, E and F, it extends only part way to each side.

XQ. 170. You mean the extensions on the cutters extend only part way?

A. No; I mean the operative portions on the body which co-operate with these cutters. It is true that the faces extend, but in so far as they extend below the operative portion of the cutters, they are idle faces and might just as well not be there.

XQ. 171. Will you please tell me whether or not, as a matter of fact, the cutters of the O'Donnell &

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Willard patent are extended at their cutting edges beyond the planes of the sides of the cutters; bearing in mind that the shanks of these cutters are tapered upwardly? In other words, projecting the planes of the sides of the shanks of the O'Donnell & Willard cutter downwardly do you find the cutting edges of these cutters any wider than they would be if the single shoulder 15 or 15', which you have stated was for those purposes, was omitted?

A. The shoulder 15 or 15' is at the top of the cutting portion; but the bearing face of the cutter is on the inner side thereof, and forms a lateral extension beyond the sides of the shanks of the cutter; and the body of the reamer is provided with bearing faces for engaging these extensions of the inner bearing face on the cutter exactly or substantially as in the extended bearing faces on the cutter and body in types D, E and F. It is true that the shanks in the O'Donnell & Willard Patent are tapered, but this does not affect the construction for the reason that the extension referred to is a lateral extension from the sides of the shank and not from any imaginary projections or prolongations thereof. Moreover, even allowing for this taper, the major portion of the inner bearing face which is formed in extension [522] at each side of the cutter, is to the outside of said prolongation of the side planes of the shanks.

XQ. 172. And how is it with respect to the width of the cutting edge of each of these cutters of the O'Donnell & Willard patent? Is the same wider, or is it not, than it would be if there was no single

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shoulder 15 or 15' on the cutter and the taper of the shank were not interrupted in its tapered formation?

A. The cutting edge shown in figure 6 of the drawing in the O'Donnell & Willard patent measures $2\frac{1}{2}$ inches across. If the outside lines of the tapering sides of the shanks were prolonged to this cutting edge, it would measure $2\frac{3}{16}$ inches, or a difference of $\frac{5}{16}$ of an inch.

XQ. 173. And the ends of the single shoulder at the top of such shoulder in total width of the two ends is considerably greater, is it not, than this difference you mention?

A. Approximately double.

XQ. 174. These ends of this single shoulder on each of these O'Donnell & Willard cutters do not in any part contact with spreading or intrust bearings on prongs or spaced extensions at the lower end of the reamer body, do they?

A. No. They contact with the bearing surface at each side of the member 3 which extends substantially across the full width of the reamer body, and is only interrupted by the key-way of the slot at the center thereof.

XQ. 175. And that member 3 is a hollow-slotted member of the reamer body and detachable therefrom, is it not? the hollow receiving the spring-actuated rod which catches the cutters, and the slot receiving the key or head which carries the cutters, in the same sense as in Double patents Nos. 1, 2 and 3, with the exception that in Double patents Nos. 1

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and 2, said hollow-slotted part is not detachable?

[523] A. Yes.

XQ. 176. In Complainant's Exhibit Wilson Patent and Complainant's Exhibit Wilson Reamer and in Complainant's Exhibit Improved Double Reamer and Cutters and in Double Reamers Types "D," "E" and "F," there is no variation of the width of the cutting end of the cutter upon which the extended bearing surfaces are formed, is there?

A. If I understand your question, it does not seem to apply to the cutters of type F, since there is a variation of the width of the bearing surface at the back of the cutter body.

XQ. 177. But part of that bearing surface is the same width as the cutting portion of that cutter beneath that part at all points, is that not correct?

A. Yes.

XQ. 178. The part A² of the Swan patent is a hollow-slotted extension in the same sense, as far as the provisions and use of a hollow and slot are concerned, as the part 6 of Double Patent No. 2 and part 6 of Double Patent No. 1 and the part 10-10' of Double patent No. 3? Is that not correct?

A. Considered only with regard to the hollow and slot, without any regard to the tilting bearings, yes.

XQ. 179. The cutters or lugs or reaming heads C of the Swan patent are not laterally enlarged beyond the shanks thereof except to provide the flanges or dovetails which ride in the ways A⁷ of the reamer body, are they?

A. They are laterally enlarged or widened at their

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inner sides to form these dovetail flanges, and at their outer sides to form the cutting portions, the width of the dovetail flanges being substantially equal to the cutting portions so that the bearing is substantially the full width of the cutting portion.

XQ. 180. But that bearing is not a bearing for causing spreading of the cutters similarly to the lateral extensions on [524] the cutters of the Double reamers or the lateral extensions on the cutters of Wilson's Patent or Wilson's Reamer in evidence, in distinction from the dovetails on such Double and Wilson reamer cutters which co-operate with the ways at the lower ends of the body? Is that not correct? Or, in other words, in the Swan cutters only these dovetails or flanges are provided as extensions which coact with the ways at the lower end of the body?

A. It is true that the mode of operation of the Swan construction in expanding the cutters is entirely different from that of the Double patent No. 1. But after the cutters have been expanded, the inner faces of the cutters bear against the corresponding faces on the body to hold the cutters in expanded position, and, as far as the extensions of these cutters go, providing a bearing the full width of the cutting portion of the cutters, and these extensions operate at this time in the act of underreaming in the same manner as the lateral extensions at the side of types D, E and F reamer cutters.

XQ. 181. And that is after expansion has taken place, I understand? A. Yes.

(Deposition of Arthur P. Knight.)

XQ. 182. Now, bearing in mind your testimony that Complainant's Exhibit Reamer Type "F" has at the lower portion of its body no extension having a definite slot and a definite hollow for the cutter-supporting key and spring-actuated rod respectively; that the block at the lower end of the body of said type F reamer when in position has no hollow and no slot open; that when this block is removed there is removed no part having a hollow and a slot utilized for accommodating the spring-actuated rod or a cutter-holding key respectively; that there are portions upon the opposed prolongations of the body of this type F reamer at the bottom of which extensions on the cutters co-operate in expansion [525] and collapsion and on the taking of the inward thrust of the cutters; and that the cutters can collapse and expand and take inward thrust when the block is so removed, irrespective of the actual performance of the reamer in service with the block so removed, which you say is not within your actual knowledge; are you still disposed to contend that this reamer type F embodies with respect to the features more the principle of Defendant's Exhibit Double Patents 1, 2 and 3, than it does the principle of Complainant's Exhibit Wilson Patent and Complainant's Exhibit Wilson Reamer?

A. I still contend that this type F reamer embodies the principle of the Double patents Nos. 1, 2 and 3, and not the principle of Complainant's Exhibit Wilson Patent, in so far as such principle is any departure from that of the Double patent.

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XQ. 183. And please state categorically why.

A. For the reason that the points you mentioned as a foundation for changing my opinion do not, in my opinion, change the essential mode of operation of the type F underreamer from that of the said Double patents as distinguished from that of the Wilson patent. The general mode of operation is the same in both of these patents, namely, that the cutters are tilted by expanding bearings and are held by dovetails in the manner set forth in the original Double Patent No. 1. The particular feature of the Wilson patent as far as I can gather from the specification and drawings, which distinguish it from the special construction of the Double patent is that it provides for a clear space at the lower end of the underreamer body within which the shanks of the cutter may collapse, thereby providing, referring to the patent, for increase amount of expansion and enabling also a straight-back cutter shape to be used, and avoiding the cut necessitated by the shoulder in the back of the Double cutter. The changes made from the type F reamer as distinguished from the Double patents Nos. [526] 1, 2 and 3, do not in any way permit this distinctive particular function of the Wilson patent to take place, for the reason that neither the Double cutter nor the Wilson cutter can be used in the type F underreamer in such a manner as to permit their shanks to enter an open or clear space between prongs at the lower end of the underreamer body so as to provide at this point of a greater expansion and collapsion of the cutter and

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for a greater thickness of cutter shank than is possible with the Double construction. I believe this answers your question categorically.

XQ. 184. Do you not consider that it is distinguishing of the principal of use of the Wilson underreamer and also of the principle of use of the type F underreamer that there is an open mouth at the bottom of each through which the spring-actuated rod may be inserted and removed in applying and removing the cutters, and that there is no necessity for any "joint" or "sub" at the top of the reamer which, as in the Double Patent No. 1, must be removed to permit the spring-actuated rod to be taken out?

A. That was not included in your category, but I may say that as my answer referred to Double Patents Nos. 1, 2 and 3, this feature is clearly shown in Double Patent No. 3.

XQ. 185. Now, combine that feature with the other features mentioned and as to which you gave an answer. Do you still consider that type F reamer is distinguished from the Wilson reamer with respect to the formation of the lower ends of the bodies and the coaction of the cutters of the bodies at such lower end and the method of applying and removing the cutters? If so, why?

A. The answer to the last question where the categorical reasons for discrimination between this type F and the Wilson patent were given, applies also to this question, for the reason [527] that the method of supporting the spring-actuated bolt has nothing

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to do with the spreading action or the particular mode of operation of the spreading means; and, moreover, it is as I have stated, substantially the same in the Wilson Patent to what it is in Double Patent No. 3. So that in this respect, also, the operation of the type F can just as well be considered as embodying the Double Patent No. 3 as the Wilson Patent.

XQ. 186. And in so far as the lower end of the type F reamer has spaced extensions, between which there is no clearly defined hollow and clearly defined slot; that it, in type F reamer when the block and bolt are removed, the spring-actuated rod may be inserted and removed from the bottom; that these extensions at the lower end of the body of type F reamer have in themselves, irrespective of the block, surfaces with which extensions upon the cutter co-operate in expansion and collapsion and partaking of intrust. Is not Defendant's Exhibit Type "F" reamer within the teaching of Complainant's Exhibit Wilson Patent and Complainant's Exhibit Wilson Reamer, irrespective of any other patent?

A. No, for the reason that while the type F reamer has the parts or structures you mention, they are not so arranged and constructed as to produce the functions and mode of operation or principle of action of the Wilson patent, and are, therefore, not within the teaching of the Wilson patent, as I take that expression to be.

XQ. 187. Well, in so far as those features are present, do they not correspond with like features

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disclosed in the Wilson patent?

A. They correspond as constructive items, but not operatively.

XQ. 188. They do correspond with the teachings of the Wilson patent in so far as assembling of the reamer parts is concerned, and in so far as collap-sion and expansion of the cutters and imparting of intrust, considered as performances of the [528] reamer are concerned? Is that not correct—without going into specific distinctions of mode of operations?

A. Quite so; just as they correspond with similar feature of the Double patents that I have referred to.

XQ. 189. In other words, you find correspondence both with the Wilson patent in these features generally and with the Double patents in these features generally? A. With the Double patents.

XQ. 190. Now, then, this detachable block in the type F reamer is mounted upon a pin or bolt similar to the bolt or pin 11 in Complainant's Exhibit Wilson patent, is it not?

A. Yes; and similar to the bolt 22 in the Double patent No. 3.

XQ. 191. But in the Double patent No. 3 it holds in the slotted and hollow portion, does it not, and does not hold in such part in type F—using these terms “hollow slotted” as we have used them in the previous testimony?

A. Considering the upper portion of the member 10 as a hollow-slotted portion, then this pin 22 does hold this hollow-slotted portion as well as the cross-

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part corresponding to this block.

XQ. 192. This block is, in fact, a bushing upon or enlargement upon this bolt or pin in the type F, is it not, aside from the use of the block when in place in collapsion and expansion of the cutters?

A. Yes; it serves as a bushing in that it serves to fill the space between the side members and constitutes the whole into a unitary structure when the bolt is drawn tight.

XQ. 193. And when the bolt is tight in type F reamer it serves as a brake between the extensions of the body of the reamer similarly to the pin 11 in the Wilson patent, does it not? [529]

A. Yes, I should say so.

XQ. 194. Assuming that any tilt of the cutters in Double Patent No. 2 takes place after the lugs 10 are entered in the groove 15 or is intended to take place, what have you to say as to the possibility of such further tilting, considering the width of the lugs 10 and the groove 15?

A. The lugs 10 are adapted to enter the grooves 15. In the manufacture of these parts they are always made so that they will always slip on one another easily, and this involves in actual manufacture enough play and looseness of movement to permit of a slight give in the bearings of lugs 10 in groove 15 of Double patent No. 2 to permit the dovetails 14 to give the small tilting action required for completion of the expansion. This is illustrated by the corresponding dovetails or supplementary dovetails in type F reamer, which engage with the dovetails of

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the extension of the body with sufficient looseness or play to permit of this slight tilting action in completing the expansion by the operation of the inclined dovetail on the reamer body.

XQ. 195. But in the patent in question, Double patent No. 2, there is not indicated clearance enough for any such action, is there?

A. The thickness of the lug 10 in the patent is shown the same as that of groove 15. But this is to be expected in a Patent Office drawing which is not intended for construction purpose.

XQ. 196. However, in so far as the showing of the drawing goes, there is an inoperative disclosure in that respect, is there not, in the patent?

A. I don't think so. This drawing is intended for use of those skilled in the art in connection with the specification, [530] and the state of the art as shown by the original Double patent, and any mechanic would not only construct it with such play in order to produce the mode of operation required by the patent, but in the actual manufacture he would certainly not make a drive fit for this which is intended to be a slide fit; and if it is a slide fit, it will in this rough class of work involve sufficient play for the purpose.

XQ. 197. As a matter of fact, in reamer type F there is no utility or need for the ledges inwardly directed from the opposed subdivisions of the body at the lower end, beyond the points where the bearing surface on the cutter engage with such ledges, is there?

(Deposition of Arthur P. Knight.)

A. You mean the upper portions of the surfaces?

XQ. 198. I mean the entire ledges.

A. The lower portions co-operate with the bearing surfaces on the cutters.

XQ. 199. But the portions above such lower portions, where there is no such co-operation, have no such purpose or use, have they?

A. They might aid in guiding the upper end, particularly if the bearing and the cross-heads become worn so as to allow too much play at that end.

XQ. 200. When the reamer is in normal condition there can be no such engagement, can there?

A. There might. There would be no reason why there should not. Placing the spring-operated rod in position and noting the position of the lugs at the upper end, and then withdrawing such rod and again noting the position, it would appear that the cutter comes to rest against the upward extension of the bearing portion of each side at the same time that it engages the bottom of the notch on the spring-operated rod, so that it [531] would seem that this is an additional guide or support for the upper end of the shank at this time.

XQ. 201. But between the upper end of the guide or support and the lower end there is a part which is not required in the action of the cutters, isn't there?

A. In the act of underreaming, yes.

XQ. 202. And if that part is eliminated the part that you have termed the remnant of the hollow-slotted transverse portion of the reamer shown in Double Patent No. 1, is eliminated, is it not?

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A. Yes.

XQ. 203. And also the corresponding parts in Double Patents Nos. 2 and 3? A. Yes.

(By consent of counsel for both parties an adjournment is now taken until to-morrow, Tuesday, July 27, 1915, at 10 o'clock A. M., at this same place.)

Office of Frederick S. Lyon, 504 Merchants Trust
Bldg.,

Los Angeles, Cal., Tuesday, July 27, 1915,

10 o'clock A. M.

This being the time and place to which the further taking of proof on behalf of defendant was continued, proceedings are now resumed.

Present: FREDERICK S. LYON, Esq., Solicitor
for Defendant.

RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

ARTHUR P. KNIGHT, recalled.

Cross-examination (Resumed).

(By Mr. BLAKESLEE.) [532]

XQ. 204. You do not find, do you, in Complainant's Exhibit Wilson Patent or Complainant's Exhibit Wilson Reamer a body provided at the lower end with a transverse portion having a definitely defined hollow and a definitely defined slot as in the three Double patents in evidence and the Swan patent and O'Donnell & Willard patent, nor do you find in such Wilson patent and reamer the cutters of Double Patent No. 1 provided upon their backs with the inwardly contracted shoulders 18. Is that not correct?

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A. I do not find in Wilson patent or reamer the separately defined slot, and hollow you refer to, nor the shoulder 18, directly back of the central portion of the cutter as in Double Patent No. 1, the corresponding shoulder in the Wilson patent being at each side of the cutter at the back and side thereof.

XQ. 205. Will you please state whether any distinction is to be made or can be made as between the use of the word "prongs" applied to Complainant's Exhibit Wilson Patent and Complainant's Exhibit Wilson Reamer and the use of the same word as applied to the type F reamer, considering such structures as provided respectively with the bolt or pin 11 of the Wilson patent and the bolt or bushing thereon at the lower end of the type F reamer?

A. The use of this word "prongs" in the Wilson patent is appropriate, but in the case of the type F underreamer under the conditions stated certainly it would not be appropriate, as the parts you call a bushing unites the lower end portions of the underreamer body rigidly and joins the bearing surfaces thereof so that the said portions do not answer to the definition of "prongs," which term to my mind, conveys the idea of separate parts projecting from the member and spaced apart and separated at their ends so as to leave a free and clear space between them. Moreover, the meaning of the word "prongs" in the Wilson patent [533] is directly associated with the mode of operation of said patent, which requires such separation of these members so as to provide for the entry of the shanks between these prongs. No

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such mode of operation is present in the type F underreamer when the block is in place, and even if the block is removed.

XQ. 206. Will you please state whether or not it is possible to use the reamer type F, namely, to put it together and take it apart and take the cutters off, as is necessarily repeatedly done in underreaming to sharpen and replace the cutters, without having a clear space between the lower ends of the extensions and the entire length of the extension at the lower end of the type F reamer, so that there is a clear space provided all the way along between these extensions?

A. During the moment when the cutters are being removed or have been removed and the block and pin have been taken out to permit such removal, there is an open or clear space. But, in the first place, this open or clear space is not such as to present the mode of operation called for in the Wilson patent, namely, of allowing collapse of the cutter-shanks into said space, and, in the second place, this open or clear space does not exist when the reamer is in actual operation in underreaming, for the reason that it is closed by the block.

XQ. 207. Then I understand that type F reamer is a prong reamer during such times as the cutters are being put in place or removed?

A. It is a prong reamer in the same sense that the Double No. 3 Patent is a prong reamer, at such a time. But it is not a prong reamer in the sense that the Wilson patent is a prong reamer, namely, at the

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time when the device is in an assembled and operative condition for underreaming, and also would not be a prong reamer in the underreaming operation in the sense that the Wilson patent is, even if the block were left out, for the [534] reason that the bearing surfaces in this type F underreamer would prevent the expansion and collapsion of the cutters according to the specific mode of operation of the Wilson patent which involves the collapsion of the cutter-shanks into the open space between the prongs.

XQ. 208. Then, I take it, your distinction between type F and the Wilson Patent as to the existence or nonexistence of the prongs is a distinction pertinent to the use and not a distinction pertinent to structural classification. In other words, I take it that as long as the prongs of the fork is used to elevate food, you would consider them prongs; but if they were stuck into a piece of cheese, and you hold the fork up and close the ends of the space between the prongs you would not consider them prongs on the fork. Is that the distinction you wish us to understand?

A. Not at all. In either case that you refer to they are, of course, prongs. But in the type F underreamer my points were, first, that when the block is in position these parts were not structural prongs since they formed with the block and unpronged lower end of the underreamer body, and, second, that with the block omitted, while they might be in one sense structurally prongs, they were not prongs presenting the mode of operation of prongs as set forth

(Deposition of Arthur P. Knight.)

in the Wilson patent, permitting the special advantages aimed at in said patent.

XQ. 209. In other words, the use of these prongs must be considered in determining whether or not they are structural prongs?

A. Whether they are prongs according to the mode of operation called for in the patent, yes.

XQ. 210. And the distinction you make is one of operation or specific use of the prongs?

A. Mode of operation or principle of action, yes.
[535]

XQ. 211. Both the prongs of the Wilson patent and reamer and of the type F reamer have dovetails or ways on their inner faces or opposed faces, and, likewise, have surfaces at their lower ends which definitely coact for expanding and collapsing, and in-thrust surfaces at the sides or beyond the sides of the cutters. Is that not correct?

A. I don't think so.

XQ. 212. Why?

A. If the word "prongs" can be applied to this type F reamer as distinguished from the lack of any prongs in the Double Patent No. 1, then we must omit from the term "prongs" in the type F reamer that portion of the bearing surface which extends between the limits of the dovetails. This would leave only the extreme outer bearing portion on each side below the ends of the dovetails and outwardly therefrom as constituting the bearing surfaces you refer to, and with such bearing surfaces alone the cutters would not be operative in expansion and contraction,

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the laterally projecting parts at each side of the cutter in this type F underreamer not being adapted to co-operate with these parts of the underreamer body to produce expansion or collapsion.

XQ. 213. In other words, you eliminate everything from this type F reamer at the lower end in any admission you may make as to its comprising a prong formation with the exception of those small areas at the lower ends and outer sides of the body with which the cutters do not coact?

A. As far as I can understand your question, I can only say that in order for these said members to constitute prongs, as I understand it, the metal at the inner side of the dovetails would have to be removed in correspondence with the showing of the Wilson patent, so that the shanks could be moved inwardly. [536] If this were done, then these members could be held to constitute prongs in the sense of the Wilson patent, as they would permit the shanks of the cutters to move inward, and in that connection the bearings of each side would have to be provided outside of the limits of this central space sufficient to produce expansion and collapsion and to give the spreading bearing required for underreaming. If, however, all the metal at the inner side of the type F underreamer was cut away so that the shanks could collapse in this manner, then my statement was that the bearings left at each side would not be adapted to produce the expansion and collapsion in the type F underreamer.

XQ. 214. Then your distinction between these said portions at the lower end of the type F reamer

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body and prongs, is, that there would have to be a re-disposition of the metal to make them prongs exactly within the sense of the Wilson patent?

A. A very considerable redistribution resulting in such an open space between the prongs as to permit collapse of the shanks between the prongs and the provision of bearing surfaces outside of the limits of the shanks so as to give the necessary bearings for expansion and collapsion in underreaming.

XQ. 215. Well, departing from such distinction in the consideration of the side portions at the lower end of the body of type F underreamer between which said portions at the lower ends thereof there is a bushing or block supported on a pin or bolt, will you please state whether or not such side portions are not provided each with dovetails or ways co-operating with the cutters and with surfaces for producing expansion and collapsion of the cutters and which surfaces co-operate with the cutters in such expansion and collapsion and in taking intrust in reaming?

A. The parts you refer to have the dovetails as stated, and perform the operations you mention, all substantially as in the corresponding parts in the Double Nos. 1 and 2 patents. [537]

XQ. 216. The answer is not responsive to the question, which did not ask for a comparison with anything else. I wish a yes or no answer to the question, as it manifestly can be given, and I move to strike out the last question as not responsive.

(The question is read by the notary.)

A. I would answer the question in the affirmative

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with the explanation which I believe I have the right to make that it can also be answered in the affirmative on the Double patent No. 1.

XQ. 217. And I suppose that affirmative proffered answer to a question not asked involves that portion of my question which was predicated upon the provision of a single open space between the side members at the lower ends of type F reamer body. Is that so?

A. This single open space in the type F reamer body corresponds, in my view, to the hollow and slot in the Double No. 1 patent, the metal being cut away so as to merge the hollow and slot together.

XQ. 218. In other words, the metal which produces the definition of the hollow and the slot is gone, and in place of a slot plus a hollow, one space remains in type F reamer. Is that not correct?

A. Yes, sir.

XQ. 219. Now, these same surfaces on the lower end of the body of type F reamer which coact with the cutters in expansion and collapsion and in taking intrust in reaming, co-operate with lateral extensions beyond the sides of the shanks of the cutters, do they not? A. Yes, sir.

XQ. 220. In each of the three Double patents and the Swan patent and the O'Donnel & Willard patent in evidence, there is a [538] cutter-spreading part at the lower end of the body having a clearly defined hollow and a clearly defined slot for the spring-actuated cutter-supporting rod and key or head, which cutter-spreading part either cannot be removed or

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else has to be removed in order to permit the spring-actuated rod and key and cutters to be removed from the lower end of the reamer body. Is that not correct? A. Yes.

XQ. 221. In the type F reamer and the Wilson patent and Wilson reamer there is no such cutter-spreading part, is there, and the spring-actuated rod and key and cutters can be removed at the lower end of the reamer body by removing the bolt or pin 11 in the Wilson patent and Wilson reamer and the bolt or pin and bushing or block upon it in the type F reamer. Is that no correct?

A. *Is* you mean by such cutter-spreading part a cutter-spreading part having a definitely defined slot and hollow, as stated in the previous question, then there is no such part in the type F or the Wilson patent.

XQ. 222. And, answering the question further, the cutters, spring-actuated rod, key or cutter-supporting head, can be removed as stated in the last question, can they not?

A. The spring-actuated rod can be removed, provided the pin and block are removed.

XQ. 223. And if you provide the metal for producing the clearly-defined hollow and slot for accommodating the spring-actuated rod or key or head for holding the cutters, you provide as in the three Double patents and the Swan and the O'Donnell & Willard patent either a fixed obstruction to the removal of the spring-actuated rod and key or cutters from the lower end of the body of the reamer, or an

(Deposition of Arthur P. Knight.)

obstruction which must be first removed, [539] or in any sense removed, to permit such removal of the spring-actuated rod and key or head and cutters. Is that not correct?

A. Only partly so if you make this cross-piece at the lower end of the body solid or integral with the body as in Double Patent No. 1. Then, as you state, the rod cannot be removed from the lower end. But if you make the parts defining the slot and key as an extension of this block as in the Double No. 3 patent, then there is no more to be removed as far as regards the number of pieces than in the type F as it stands.

XQ. 224. But there is still to be removed the cumbersome transverse part at the lower end of the reamer body which confines the separate hollow and separate slot and upon which the final spreading action of the Double reamer takes place, and to which the intrust of the cutters in the Double reamer is imparted. Is that not correct?

A. No. This part corresponds to the block, and the removal of the block in the type F underreamer corresponds to the removal of this part including the part 10 with the upward extension 10' thereof as one piece.

XQ. 225. But still it is true, is it not, that in removing the part of the hollow slot, it is necessary to remove the transverse portion containing such hollow slot which is not present in the type F reamer, but is removable in the Double Patent No. 3?

A. Yes. This operation does not involve any

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greater number of operations, however, but may involve removing a large piece of metal.

XQ. 226. And involves removing a part of the reamer entering into the expanding and collapsing and intrust receiving action, does it not?

A. Yes; it does in each case.

XQ. 227. Do you not think it better practice to retain in the main permanently and fixedly upon the reamer body the [540] parts which coact with the cutters than to make such parts in the main or in the whole, at least, removable, from a standpoint of positiveness of operation, durability and general serviceability and resistance to wear, strain and stresses, in general?

A. I concede that there might be advantages in either way of doing it. The formation of the bearing parts integrally on the body might give greater rigidity, and, on the other hand, there formation on a separate part rigidly held in place by detachable means, there might be advantage in renewal.

XQ. 228. But if in place of renewing the parts it were possible, as, for instance, in considering the type F reamer and the Wilson reamer, to machine back these surfaces on the body which co-operate with the cutters, would not that seem to you to be better practice than by such replacements?

A. I do not see that there is any considerable provision for machining back in the type F underreamer with this removable block in position. But I do not see that your question can apply to this underreamer as it does to the Wilson underreamer.

(Deposition of Arthur P. Knight.)

XQ. 229. You do not know, as a matter of fact, that the type F reamer was not machined back?

A. No.

XQ. 230. Assume that it can be machined back or is machined back for the renewing or restoring of these surfaces. Will you please now answer the foregoing question?

A. As I understand your question, it is to compare methods of machining back as against renewal of the removable part?

XQ. 231. Yes.

A. I am not prepared to say which would be the better practice.

XQ. 232. Is it the general practice, however, in handling and using and repairing tools or devices for standing heavy [541] stresses, and is it not preferable, to reform the worn surfaces than to replace them with fresh surfaces dependent upon holding or attaching devices for maintaining their working position?

A. In general it is preferable, provided it can be done without dislocating the operative parts of the mechanism.

XQ. 233. In the Swan patent the lower end portion A² of the body serves as a wedge to spread apart the cutters when they are drawn upwardly, and permits them to approach each other or converge as *the* are lowered. Is that not correct? A. Yes.

XQ. 234. Do you not think that the use of the block such as in the type F reamer, bearing in mind that it has to frequently be removed and replaced to

(Deposition of Arthur P. Knight.)

premit removing and sharpening of the cutters, would, in heavy service, become so burred or misshapen or worn, that its removal and replacement would become in a relatively short time difficult?

A. No, I don't think so.

XQ. 235. You do not think there would be a tendency to mar the block at its margin where it fits between the opposite sides of the reamer body so as to upset the metal and interfere with a perfect fit?

A. Probably there would be some such tendency. I think the block could be readily driven out and in.

XQ. 236. Driving out and in would be another operation incident to removing the cutters and sharpening and replacing them, would it not?

A. I don't know what you mean by "another operation." It would be the same operation we have been talking about in removing the block.

XQ. 237. In each of the reamers, Complainant's Exhibit Improved Double Reamer and Cutters, and reamers D and E, there is present a cutter with definitely laterally extended bearing surfaces cooperating with definitely laterally expanding surfaces [542] upon the body of the reamer in collapsion and expansion and in imparting inthrust. Is that not correct?

A. I don't think so.

XQ. 238. Please state why.

A. Your question in effect implied that these definitely laterally extending portions on the improved Double cutters and the types D and E took part in the expansion and collapsion as well as in the inthrust

(Deposition of Arthur P. Knight.)

of underreaming. I cannot agree with that, as the collapsion and expansion actions are in these cutters performed by the shoulders on the inner faces of the cutters, and it is only after the cutters have ridden up over past these shoulders and have become substantially to the fully expanded position that these wide bearing faces come into operation. It is true that at the completion of this movement the parts are brought home or into rigid position by engagement with tapered dovetails, and at this moment there is a stiffening or final completion of the expansive movement. But the expansion movement proper is performed by the shoulders, as stated, and not by these definitely laterally extended portions you refer to.

XQ. 239. These shoulders extend clear across the cutters in these double reamers, do they not?

A. They extend clear across the shank portion, yes.

XQ. 240. And these lateral extensions on the cutters referred to in my question next before the last previous question, do contact with the lateral extensions upon the body of the reamer in final expansion action of the cutters and in the initial contraction or collapsion action of the cutters, and in the imparting of inthrust from the cutters to the bodies of the reamers. Is that not correct? A. Yes, sir.

XQ. 241. And these lateral extensions on these cutters and on the cutters of the type F reamer with the co-operating [543] parts on the body resist effectively any tendency of the cutters which there

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may be to execute rotatory actions on their longitudinal axes. Is that not correct?

A. Whether they do so effectively or not, I am not prepared to say. But they certainly aid in resisting such rotatory movement. The entire bearing surface and the dovetails also assist in this resisting operation as in the Double No. 2 patent where the parts 10 also give an increased bearing for resisting rotatory movement in the same manner.

(By consent of counsel for both parties an adjournment is now taken until 2 o'clock P. M.)

Office of Frederick S. Lyon, 504 Merchants Trust
Bldg.

Los Angeles, Cal., Tuesday, July 27, 1915.

2 o'clock P. M.

This being the time and place to which the further taking of proof on behalf of defendant was continued, proceedings are now resumed.

Present: FREDERICK S. LYON, Esq., Counsel
for Defendant.

RAYMOND IVES BLAKESLEE, Esq.,
Counsel for Complainant.

ARTHUR P. KNIGHT, recalled.

Cross-examination (Resumed).

(By Mr. BLAKESLEE.)

XQ. 242. Is it not true that in Complainant's Exhibit Improved Double Reamer and Cutters, and in reamers types D, E and F, the definitely laterally extended bearing portions upon the bodies which co-act with the definite lateral extensions upon the cut-

(Deposition of Arthur P. Knight.)

ters, are, in part, beneath the lower termination of the dovetails on the bodies with which the cutters coact? In other [544] words, do not portions of these surfaces upon the bodies of these reamers extend downwardly or project downwardly beneath the dovetail zone?

A. Yes, as I understand your question.

XQ. 243. And, it is likewise true, is it not, that the prongs or forks in Complainant's Exhibit Wilson Patent and Complainant's Exhibit Wilson Reamer likewise extend downwardly below the dovetail zones providing the spreading surfaces with which the lateral shoulders on the cutters coact?

A. Yes.

XQ. 244. Are not the lateral shoulders upon the cutters of Complainant's Exhibit Wilson Patent and Complainant's Exhibit Wilson Reamer in effect lateral extensions beyond the width of the shanks of the cutters? A. Yes.

XQ. 245. And does it make any difference in the action of these shoulders that they are slightly rounded in so far as their contacting with the spreading faces 9 and 17 is concerned?

A. I think it makes a great deal of difference whether they are rounded or not. You use the expression "slightly rounded," but the patent refers to these shoulders as being rounded for the purpose of enabling them to ride more readily over the beveled end faces, etc., and in the Wilson reamer these shoulders are decidedly rounded for the same purpose. And without such rounding, that is to say, if they

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presented a sharp edge, they would not be adapted to ride effectively over the beveled end 17 of the patent.

XQ. 246. Well, would you call the shoulder formed by inwardly enlarging the back of the cutter in type F reamer a rounded shoulder?

A. No, but it is beveled, which performs to a large extent the same function in easing off the bearing, this shoulder [545] being the portion extending the full width of the narrower portion of the back of the cutter and not, as I understand, applying to the lateral projections on each side thereof.

XQ. 247. And those lateral projections themselves are not rounded materially? A. No, sir.

XQ. 248. But they do contact with the lateral extensions on the body of the type F reamer?

A. No, as far as I can ascertain from an inspection of the underreamer, these portions do not at any time make effective contact with the inclined beveled faces at the lower end of the underreamer?

XQ. 249. These lateral extensions, namely, from the complete width of the cutting end of the reamer, do coact with the parallel faces of the lateral extensions on the body in the final stage of the expansion of the cutters, do they not?

A. You are now talking about the bearings on the inside of the cutters. These do, as you say, coact with the correspondingly located bearing surfaces on the underreamer body to aid in the very last part of the expanding operations.

XQ. 250. How comes it, do you suppose, that the

(Deposition of Arthur P. Knight.)

edges of these wider portions of the cutters are distinctly bright, thus showing wear by contact?

A. Do you mean the outside edges?

XQ. 251. I mean the edges transverse to the longitudinal axis of the cutter, namely, the upper edges of the widest portions of the cutter at the sides of the same.

A. This has evidently taken place by inserting these parts on the opposite parallel bearing faces of the underreamer body as the cutters are being drawn home into their seats in the dovetails after the expanding shoulder proper has performed its function.
[546]

XQ. 252. Does not that imply that these edge portions themselves came in contact with the parallel expanding faces on the body in a tilting action of the cutter?

A. As I have stated, the tilting action at this time is substantially completed, the only further operation being the firm seating of the dovetails which may involve, and generally would involve, a slight further tilting as the upper ends of cutter-shanks are forced inward by the taper of the dovetails. But the spaces you refer to as showing this wear do not correspond to the shoulders for expansion of the cutters, as I take that term. Such a shoulder would be constituted by the upper face which in the operation of the underreamer lies approximately horizontal, and in order to enable this face to perform such expanding functions effectively, it would have to be rounded or beveled. As a matter of fact, it does not have to be

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in this type F underreamer for the reason that it is never called on to perform this function, the expanding being performed by the shoulders just about an inch higher up on the cutter, and is at the back of the cutter-shank itself, so that before these lower shoulders or projections, as they may more properly be called, come into a position in which they could possibly engage the lower beveled faces of the underreamer, any expanding operation which they could perform has already been performed by this beveled shoulder on the inside of the cutter-shank.

XQ. 253. You do not wish to retract your former testimony, do you, to the effect that the faces of those wider cutter body extensions do coact with the parallel bearing surfaces on the body of the type F reamer in a part or the final part of the expanding and the initial part of the collapsing action of the cutters due to the inward inclination of the dovetails on the body? [547]

A. No; I do not, this action being perfected by the flat surface on the inside of these portions.

XQ. 254. And that final action in expansion and initial action in contraction is performed in the Wilson patent and the Wilson reamer by coaction of the flat surfaces of these lateral extensions or shoulders with the spreading bearings 9 and the prongs, is it not?

A. Yes, with this difference: that in the type F reamer the final tilting to fully collapsed condition is effected by tapering the dovetails as in the original Double patent No. 1, the bearing surfaces at the bot-

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tom of the underreamer being parallel, whereas in the Wilson patent the final tilting is effected by the taper of the bearing surfaces 9 at the lower ends of the prong, the dovetails being parallel.

XQ. 255. These extreme lateral extensions on the cutters of the type F reamer impart to the lateral extensions of the body of that reamer intrust of the cutters in reaming operations in the same manner that the lateral extensions of the shoulders on the Wilson cutters impart intrust to the bearing surfaces 9. Is that not correct?

A. Yes. And in the same manner as the lateral extensions 10 of Double patent No. 2 to exert pressure on the corresponding surfaces on the reamer body, and in the same manner as the lateral extensions and each side of the cutters 12 in the O'Donnel & Willard patent exert pressure on the corresponding surfaces of the reamer body.

XQ. 256. In other words, the parts you mention after answering the last question, you mean likewise impart intrust? A. Yes.

XQ. 257. In view of the fact that the bearing surfaces 17 of the Wilson Patent and Wilson Reamer are beveled, it makes it extremely possible for the lateral shoulders on the cutters [548] of the Wilson patent to ride over those surfaces even if they were not rounded, does it not, following the same reasoning that you employ in connection with the beveled formation of the shoulder on the inner face of the cutter of the Double reamer?

A. If they were properly beveled it would prob-

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ably be just as good as round.

XQ. 258. Supposing they were not beveled. Could not a straight edge ride easily over the beveled surface?

A. It would be very poor mechanical practice in cases where you have to withstand pressures such as are exerted by the spring and by the shoe of the casing, particularly in view of the small inclination or pitch of the bevel at the bottom of the underreamer.

XQ. 259. It is impossible for a cutter of the Double type, and I call your attention now particularly to either cutter of type F reamer, to expand and collapse by engagement of its expanding shoulder with the body without such shoulder becoming rounded or beveled, is it not?

A. The presumption would be that there would be some rounding or beveling off of the lower corners or edge of the shoulders. I note, however, that while in the Double improved cutter there seems to be some rounding at this point, in the old style Double cutter No. 3 which has been evidently subjected to considerable usage by the looks of the bit or cutting edge, there is comparatively little wear of this shoulder. This would indicate that the major portion of the expanding action is exerted by the operation of the shoulder already beveled before it rides over the edge.

XQ. 260. This rounding or beveling is very pronounced in the cutters of Exhibit Double Improved Underreamer and Cutters, is it not?

A. Seems to be. [549]

XQ. 261. And you don't know, as a matter of fact,

(Deposition of Arthur P. Knight.)

how much use any of these cutters have been subjected to?

A. I can only judge by the looks of them.

XQ. 262. In Claims 16 and 17 of Complainant's Exhibit Wilson Patent, there is no reference to any rounding of the shoulders on the cutters, is there?

A. In order to understand the meaning of the word "shoulders" in these claims, reference must be had to the specification, and in the specification they are defined as rounded, and they would be required to be either rounded or beveled or some equivalent expression, in order to enable them to perform the expanding function.

XQ. 263. Now, as a matter of fact, the rounding which you have referred to of these shoulders, is shown at 16, is it not, namely, at the outer corners of such shoulders and not extending transversely clear across the shoulders, in accordance with the Wilson patent?

A. It begins at the inner edge and extends downwardly outwardly in a transverse direction.

XQ. 264. It is shown in figure 9 as comprising a downward and sidewise rounding, extending only about half way across the top of the shoulder, isn't it? A. Nearly to the inner edge.

XQ. 265. There is no showing in either figures 8 or 9 of a rounding up over the shoulder that is proceeding lengthwise of the cutter up over the shoulder and on to its top face, is there?

A. No, but there is in Wilson reamer, and I judge that Mr. Wilson found it necessary to change the

(Deposition of Arthur P. Knight.)

shape of the rounding of his shoulder, otherwise he would not have done so.

XQ. 266. You do not mean to testify as a patent attorney that a claim is to be limited necessarily to every disclosure of the patent in detail covered by the language of such claim? [550]

Mr. LYON.—Objected to as calling for a conclusion of the witness on a question of law, and incompetent.

Mr. BLAKESLEE.—The witness has qualified as a patent attorney and furthermore has testified voluntarily on this matter.

A. Not necessarily. It is only to be limited to the extent required by the specification and the state of the art.

XQ. 267. The so-called Bole patent key which holds the lower end of the spring performs the same function in the type F reamer as the block connected to the dowel pins 8 of the Complainant's Exhibit Wilson Patent, does it not? A. Yes, sir.

XQ. 268. Aside from the specific formations or dispositions of the metal, isn't the lower end portion of the type F reamer with the block and pin out a forked end just as much as the lower end of the Wilson reamer with the pin out is a forked end?

A. No, sir; not just as much. If one should take the Double patent No. 1, the old original Double reamer as in the old Double patent No. 1, and make a saw-cut up through the middle of the transversely extending member, that would in a way divide the two sides of the downward extension of the under-

(Deposition of Arthur P. Knight.)

reamer body and in a broad sense these two sides might be termed prongs or forked members. But such a saw-cut would make no difference in the mode of operation of the device, and the distinction implied by the word "prongs" will, in that case, be without a difference. But if this cut were enlarged so that the spring-operated rod could be withdrawn through the opening so formed, then the word "prong" or "fork" begins to have a meaning. And if the cut is further enlarged so as to permit the shanks of the cutters to collapse there into, the structure becomes a fork or prong structure in the full and complete meaning as used in the Wilson patent. For this reason I say that these side members in the type F underreamer are not prongs or forks, just as much as [551] the side members are in the Wilson patent.

XQ. 269. But you will notice that my question involved the elimination of *an* particular arrangement or disposition of the metal in such forks. In that case cannot they be called forks structurally in either case mentioned?

A. In a broad sense, yes.

XQ. 270. And in the block is omitted from the pin in type F and the pin is used the same as the pin or bolt 11 is used in the Wilson patent, do not they still mutually correspond in that particular sense as forked constructions?

A. In a broad sense only.

XQ. 271. Does any one of the three Double patents or the Swan patent or the O'Donnell & Willard

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patent show a reamer body with such pronged lower end, using the term "prong" or referring to its prongs in the broad sense you have just used, in which there is an open space between such prongs, broadly considered, in which the cutter-supporting means plays up and down as it does in the Wilson patent and reamer and in the type F reamer?

A. It seems to me Double patent No. 3 answers that description.

XQ. 272. Well, let us add the limitation then that the forks are provided with means which guide the upper ends of the cutters in collapsion and expansion, and, likewise, with surfaces which co-operate directly with expanding surfaces on the cutters in part to produce the expanding and collapsing action and to take the cutter inthrust. What then?

A. Bearing in mind your limitation by the words "impart," which I take to include only the final expanding action before referred to in my testimony, and in which sense only the type F underreamer could be held to answer the description, I do not find in the Double No. 2 patent the specific structural arrangement you referred to. [552]

XQ. 273. Do you find it in either of the two other Double patents or in the Swan or O'Donnell & Willard patent?

A. No; not in the specific form in which you have stated. I will say, however, that in the O'Donnell & Willard patent the division of the member 3 by the vertical slot does divide the two sides of this bearing member so as to permit play of the spring-operated

(Deposition of Arthur P. Knight.)

rod, although not sufficiently to permit withdrawal of the said rod to permit inward collapsing therein of the shanks of the cutters.

XQ. 274. That is the slot 4, is it not? A. Yes.

XQ. 275. And that does not extend clear through to the bottom of the spreading portion of the body, does it?

A. No, but I fail to see what effect that has on the mode of operation.

XQ. 276. It cannot be said to do anything more in producing forks than on your corresponding slot in Double Patent No. 3, the corresponding slot in Double Patent No. 1, the corresponding slot in Double Patent No. 2, or the corresponding slot in the Swan patent?

A. No; I cannot say that it does in each of these cases. The vertical slot or hollow divides this portion of the underreamer sufficiently for play of the spring-operated rod.

XQ. 277. And that slot and hollow are the clearly defined slot and hollow that are not to be found in the type F reamer or in the Wilson patent or the Wilson reamer, are they not?

A. As clearly defined or distinct elements, yes.

XQ. 278. In both type F reamer and in Wilson reamer and in Wilson patent, the upper ends of the cutters engage with bearings or shoulders on the body to take the downthrust of the body, or the upthrust of the cutters, do they not, and is that not also true as to reamers types D and E and the Double improved reamer [553] and cutters?

(Deposition of Arthur P. Knight.)

A. Yes, sir; and also with the original Double Reamer of Double Patent No. 1.

XQ. 279. And in each of the said mentioned reamers, the dovetails on the bodies likewise take the upward thrust of the cutters in operation, do they not?

A. Yes; and this is also true of the Double Patent No. 1.

Redirect Examination.

(By Mr. LYON.)

RDQ. 280. Mr. Knight, referring to Defendant's Exhibit Double Patent No. 1, in the device therein illustrated and described, what rocking movement is there of the cutter at the final expansion?

A. When shoulder 26 rides on the beveled face 25 in the upward movement of the cutter, the bearing face 18 evidently rides onto the opposite parallel bearing faces on the underreamer body; and in the further upward movement of the cutter the dovetails on the cutter ride on the tapered dovetails on the underreamer body, so that the upward end of the cutter is drawn inward; and as the lower end rides upward on the parallel bearing faces, it results in a tilting action of the cutters.

RDQ. 281. And what is it that causes such tilting action of the cutter in that device?

A. It is primarily the taper of the dovetail on the underreamer body.

RDQ. 282. Now, referring to Complainant's Exhibit Improved Double Reamer and Complainant's Exhibit Type F, do you find in either of these this

(Deposition of Arthur P. Knight.)

same final tilting action? A. Just the same.

RDQ. 283. Is that final tilting action the tilting action to which you have heretofore referred on cross-examination as the last motion of expansion of the cutters of those reamers? [554]

A. It is.

RDQ. 284. In what manner, if at all, does the provision of the wider intrust bearing surfaces on the cutters of Complainant's Exhibit Improved Double Reamer and type F reamer, affect this final tilting or rocking movement of the cutters in expansion?

A. It does not affect it, but simply furnishes an additional bearing area operating in the same manner.

RDQ. 285. If these expanded portions were out from the bits of Complainant's Exhibit Improved Double Reamer and Type F Reamer, would it in any manner affect this tilting or rocking action of the bit in final expansion?

Mr. BLAKESLEE.—Objected to as having been already answered by the witness.

A. It would not affect it except by reducing to a very slight extent the amount of bearing area.

RDQ. 286. (By Mr. LYON.) Would that in any degree affect it as far as expansion is concerned?

Mr. BLAKESLEE.—Objected to as indefinite and as repetitious, the witness having testified that those extensions enter into this expanding action.

A. No; it would not change the expanding action over what would be affected by the remaining por-

(Deposition of Arthur P. Knight.)

tion of the bearing surfaces. These lateral extensions enter into the final expanding action just the same way as the rest of the bearing surfaces do.

RDQ. 287. (By Mr. LYON.) What effect, if any, would it have in the method of contraction and expansion of the bits of the O'Donnell & Willard underreamer, if the slot 4 were continued down through the bottom of the upper or wedge-shaped partition 3?

A. I cannot see that it would make any difference at all in the operation of the underreamer.

RDQ. 288. Would you or would you not then have in its broad sense a body terminating in prongs? [555]

A. Yes; I consider the member 3 as a part of the body, which it is in operation, being rigidly connected therewith.

RDQ. 289. Does it then correspond to the prong or fork of the body of the Wilson underreamer, as you understand the term "prongs" and "forks" as applied to that underreamer in Complainant's Exhibit Wilson Patent? A. No, sir.

RDQ. 290. Why not?

A. For the reason that even if the slot 4 were extended down in the O'Donnell & Willard patent, it would not provide for the special mode of operation set forth in the Wilson patent, namely, the provision of the open space between the prongs and forks at the lower end of the underreamer body enabling the cutter shanks to collapse thereinto in the manner stated in said patent.

(Deposition of Arthur P. Knight.)

Mr. LYON.—That is all.

Recross-examination.

(By Mr. BLAKESLEE.)

RXQ. 291. If you so continue the slot 4 with the removable extension 3 at the lower end of the body of the O'Donnell & Willard patent, down to the bottom of that extension, it would not permit you to withdraw the spring-actuated rod and cutter-supporting key with the cutters from the lower end of the body of the reamer, would it?

A. If the member 16 were withdrawn the spring-operated rod a-b with the head 24 thereon could be slipped down, the slot 4, being such as to permit this operation. But this is prevented by the spring 10 and nut 11 on the rod which prevents this movement, by the engagement with the top of the body 3.

RXQ. 292. There is no disclosure in the patent of any such purpose or intention or modification, is there?

A. You mean extending the slot to the bottom?

RXQ. 293. Yes, to permit doing what you say could, to a [556] certain extent, be done without removing the spring-actuated rod. A. No.

RXQ. 294. The more expanding surface on cutters and the more spreading surface you provide on the bodies of reamers to co-operate therewith, the more strength there is inherent in these parts. Is that not correct? A. Naturally.

(Deposition of Arthur P. Knight.)

(By consent of counsel for both parties an adjournment is now taken until to-morrow, Wednesday, July 28, 1915, at ten o'clock A. M.)

Office of Frederick S. Lyon, 504 Merchants Trust Bldg.,

Los Angeles, Cal., Wednesday, July 28, 1915.

This being the time and place to which the further taking of proof on behalf of defendant was continued, proceedings are now resumed.

Present: FREDERICK S. LYON, Esq., Solicitor
for Defendant.

RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

Deposition of Thomas J. Griffin, for Defendant.

THOMAS J. GRIFFIN, being first duly sworn according to law, testified as follows:

Direct Examination.

(By Mr. LYON.)

Q. 1. Your name is Thomas J. Griffin?

A. Yes, sir.

Q. 2. You are a resident of Los Angeles, California?

A. Yes, sir.

Q. 3. How long have you resided in Los Angeles?

A. Nine years. [557]

Q. 4. When did you come to California?

A. The 16th day of April, 1906.

Q. 5. What occupation have you been engaged in since coming to California?

A. Principally drilling oil wells.

(Deposition of Thomas J. Griffin.)

Q. 6. In what territories have you drilled oil wells in California?

A. In the Orcutt field, Maricopa and Salt Lake.

Q. 7. The Salt Lake field is the field west of the city of Los Angeles? A. Yes.

Q. 8. The Maricopa field is in Kern County?

A. Yes.

Q. 9. And the Orcutt field in Santa Barbara?

A. Yes; Santa Barbara County, California.

Q. 10. What type of drilling apparatus did you use in your work?

A. The standard and rotary rig.

Q. 11. With such standard rig did you use any types of underreamers?

A. Yes, sir; I have used the Wilson and the Double.

Q. 12. The Wilson, manufactured by the Wilson & Willard Manufacturing Company of Los Angeles?

A. Yes.

Q. 13. And the Double is the Double or Union reamer manufactured by the Union Tool Company?

A. Yes.

Q. 14. Of Los Angeles and Torrance, California?

A. Yes.

Q. 15. Are you familiar with mechanical drawings? A. Yes.

Q. 16. What experience, if any, have you had with mechanical drawings? [558]

A. I served four years in the Ames Iron Works in Oswego, New York, as machinist, and had drawings to work on all the time. I further served two

(Deposition of Thomas J. Griffin.)

years in the blacksmith-shop of the Gulf, Colorado & Santa Fe Railroad Company in Galveston, Texas, where I had to use mechanical drawings of all kinds in the blacksmith-shop in forging. I also was foreman of the machine-shop of the Lee Iron Works at Galveston for about a year and a half.

Q. 17. Have you ever had any occasion to inspect or interpret letters patent for inventions?

A. Yes, sir.

Q. 18. To what extent and under what circumstances?

A. I have made applications and taken out a great number of patents of my own, and I have been a witness in a patent suit of the Union Tool Company or Edward Double and others against the Wilson & Willard Manufacturing Company, and have been a witness in behalf of myself in previous patent litigation of my own, namely, with the American Cotton Company of New York, and Magnus Swenson of Chicago.

Q. 19. I show you Complainant's Exhibit Wilson Patent and Defendant's Exhibits Double Patents Nos. 1, 2 and 3, and O'Donnell & Willard Patent, and Swan Patent, and ask you if you have examined the same and are familiar with the disclosures thereof and understand the same?

A. I have examined them and am familiar with the contents therein embodied.

Q. 20. For how long have you been familiar with these patents and the subject matters thereof?

A. About three years.

(Deposition of Thomas J. Griffin.)

Q. 21. You have previously examined all these patents and exhibits in connection with the testimony given by you in the case of the Union Tool Company et al., against the Wilson & Willard Manufacturing Company referred to by you, have you?

A. Yes. [559]

Q. 22. I show you Complainant's Exhibit Wilson Reamer and Complainant's Exhibit Improved Double Reamer and Cutters, and Complainant's Exhibit Old-Style Double Underreamer, and Complainant's Exhibit Old-Style Double Reamer Cutter No. 1, and Complainant's Exhibit Defendant's Reamers C, D and E and Type F, and Defendant's Exhibit Old-Style Double Cutters Nos. 1, 2 and 3. Have you examined and are you familiar with said exhibits?

A. Yes.

Q. 23. How many of these different types of reamers illustrated in the exhibits last called to your attention have you personally used in actual operation?

A. I have used all the reamers mentioned excepting type F.

Q. 24. And how about the cutters?

A. Also the cutters. The reamers and cutters, excepting the type F reamer and cutters.

Q. 25. Will you please take Complainant's Exhibit Wilson Patent and explain the mode of operation and principle of action of the parts and the construction and inter-relation thereof, as the device therein is illustrated and disclosed, and compare the same with Complainant's Exhibit Old-Style Double

(Deposition of Thomas J. Griffin.)

Underreamer, Old-Style Double Underreamer Cutters, Improved Double Reamer and Cutters, Reamer Type F, Defendant's Reamers Types C. D and E, and Defendant's Exhibit Old-Style Double Cutters Nos. 1, 2 and 3, and with the same parts or similar parts disclosed or described in Defendant's Exhibits Swan Patent and O'Donnell & Willard Patent and Double Patents Nos. 1, 2 and 3, and with each other.

Mr. BLAKESLEE.—Objected to on the ground that the witness is not qualified to answer the question.

A. In examining the Wilson patent No. 827,595, Fig. 1, I find, first, that it is clearly an inoperative paper drawing, as clearly shown in Fig. 1, and the cutters as shown in Fig. 1 or the tool as shown in Fig. 1 would be mechanically inoperative and [560] is not as represented by the manufactured product, namely, the cutter. The cutter made as the Wilson disclosed cutter, and as shown in Fig. 1, particularly, could not be put into the hole or could it be got out of the hole, for the reason that the upper parts or portions of the shank of the cutter is the only portion that is in contact with the casing or shoe as the drawing discloses at 4³. A cutter made in such a shape would not collapse close enough together to allow the reamer to enter the casing or be removed from the casing. The riding surface is in a different position in the manufactured cutter than is shown in Fig. 1. There is a sharp corner shown at the upper end of the shank dragging against the casing, which shoulder would catch and hang in the joints or casing

(Deposition of Thomas J. Griffin.)

as it entered or was withdrawn from the well. This is clearly shown in the collapse drawing Fig. 1 in the central and lower portion of the Wilson cutter shank. Beginning at the upper part or near the upper part of the spreading bearing, the inner portion has been beveled off so that the cutters would come together to allow it to enter the casing. The mode of operation of the Wilson reamer is first to pull the cutters down by mechanical means until they are collapsed to their smallest proportion, and hold them there by a ring or other means, until the cutters have entered in said casing at the top, and then they will by friction be held in their contracted position until the reamer goes below the casing shoe, when by the exertion of the spring located upon the spring-actuated tee-rod will cause the cutters to abruptly expand over the lower portion of the forked prongs, when they will slide further upwardly and over the upwardly and outwardly inclined surfaces of the fork of the reamer body. At that point the tool is ready for the line to be hitched over and place upon the beam and the underreaming is to proceed. In the Wilson reamer there is no central portion or metal that the reamer cutter expands over, but it solely depends upon the prongs or forked end to get its expansion. In the old-style [561] Double reamer body we have a solid portion of metal over which the inner bearing face of the cutter rides, over an abrupt angular bearing at the lower portion of the reamer body. The spring-actuated rod and key holding or in contact with the upper portion of the

(Deposition of Thomas J. Griffin.)

shanks of the cutters, pulls these cutters upwardly and they ride over the V-shaped notch across the inner face of the cutter. The mode of preparation for the entrance of the tool is identical with that of the Wilson. The mode of expansion after passing through the casing preparatory to its readiness for use is identical with the Wilson. The point of expansion is at a different position, as it comes directly across the entire inner surface of the cutter at a higher point in the old style Double reamer and in all the different types of Double reamers, including type F. The point of expansion has not been changed in any of the types named nor has the depth or increased depth of the V-shaped bearing been changed in any manner whatsoever. In the old type reamer and type C, D and E, 1, 2 and 3, the length of the cutters has been changed, as the heft or weight causing an increased outside diameter of the casing necessitated the difference in the length of the cutters. A shorter cutter expanding fulcrumed from a given point will be greater expanding over a given thickness of metal, at its lower portion will necessarily cause to be reamed or given a larger expansion of the cutters reaming a larger hole. This is attained by the lengthening of the cutter or shortening the cutter as desired in the Double reamer. In examining and comparing the different makes of Double reamers I find that the relative thickness of the lower inner portions of the reamer body, have not been increased or decreased. In Complainant's Exhibit Old-Style Double Underreamer Body, I find

(Deposition of Thomas J. Griffin.)

that the body at its lower portion has a hollow-slotted extension with a portion of the slot at its lower end left for the purpose of preventing the cutters from being lost when pulled down too low in the hole and preventing such an accident. In the Wilson [562] reamer I find a hollow-slotted extension without any metal left in the lower portion for the prevention of such an accident, and in place thereof a bolt or pin that is screwed into one side and keyed for this safety. I find in the old type cutter a square bearing shoulder in the upper portion of the cutter, that is to say, that receives the blow in reaming the same as in the Wilson. I find a double dovetail, the upper one of which extends the full length of the hollow-slotted extension and the lower one or one nearest the bearing face of the cutter is provided approximately the length of the bearing face which gives a greater area of surface than if it had the single or one dovetail. This feature is clearly disclosed in cutter No. 1. The length of the second dovetail begins at the spreading bearing on the inner face and continues downwardly, the full length of the expansion and contraction movement which extends the entire distance across the inner face of the cutter.

In the Wilson reamer and patent I find a hollow-slotted extension with the slot completely cut out by increasing the bore of the reamer, thus eliminating the inner bearing surfaces as shown in the Double old style, so that the inner faces of the cutters at all times are in contact. This feature is also embodied

(Deposition of Thomas J. Griffin.)

in the type F—they have not been eliminated. In the Wilson there is no such bearing surface nor does the inner portion of the cutter at any time touch upon any stationary metal,—a very broad and distinctive difference, which will be shown by placing the Wilson cutter in position—and the top or shank portion thereof will fall into the center of the reamer body. This will not be the case in the old style Double, the improved Double of the type C, D and E and F, as this part of the metal remains and is an important feature of the reamer. If it were eliminated in the old style Double reamer, it would not operate at all and would not be a tool of any value whatsoever. The same can be said in [563] all of the different types of reamers. In the Wilson reamer lug there are two separate and distinct outer bearing faces, said surfaces not being parallel to the dovetail portions of the cutter but being at an angle to correspond with the gradual upwardly and outwardly inclined bearing surfaces of the reamer body. There are no such bearings on any of the Double underreamers, as the inner bearing surface of the Double reamers are all parallel with the back portion of the cutter. In other words, the bearing surfaces that are in contact on the reamer body are parallel. In the Wilson it is different, being at an angle to form angular bearing surfaces. The collapse of the Wilson cutters, that is to say, when in reaming position, when the tool pinches, is relieved by pulling down the cutter over these upwardly and outwardly inclined bearing surfaces lo-

(Deposition of Thomas J. Griffin.)

cated upon the reamer body and known as the bearing surfaces which are provided for the purposes of receiving the impact blow of the reamer lug, which at times is very great when the reamer lugs are dull. In the Double reamer of all the different types the action when pinched is different. As shown in all of the bodies, when the cutter starts to pull down and slide over the inner face of the cutter, there is a slight tilting motion enabling the cutter to relieve itself slightly and to pull up without pulling the cutter completely down over the spreading bearings at the end of the body.

(By consent of counsel for both parties, an adjournment is now taken until 2 o'clock P. M. of this day at this same place.) [564]

Office of Frederick S. Lyon, 504 Merchants Trust
Bldg.

Los Angeles, Cal., Wednesday, July 28, 1915,
2 o'clock P. M.

This being the time and place to which the further taking of proofs on behalf of defendant was continued, proceedings are now resumed.

Present: FREDERICK S. LYON, Esq., Counsel for
Defendant.

RAYMOND IVES BLAKESLEE, Esq.,
Counsel for Complainant.

THOMAS J. GRIFFIN, recalled.

Direct Examination (Continued.)

(By Mr. LYON.)

(The last portion of the witness's answer just before adjournment, is read.)

(Deposition of Thomas J. Griffin.)

The WITNESS.—(Continuing.) This action is similar in all types of Double reamers. In type C underreamer, the cutter is identical in construction as in the old style, having the double dovetails for the purpose of giving more bearing surface on the inner face of the cutter. The shank of the cutter, it will be noticed, is beveled, for the purpose of receiving a straighter impact blow. The recess in the back of the cutter has been placed there for the purpose of allowing the I-bolt that is made for the purpose of pulling down the spring-actuated mandrel so that when the I-bolt is rigidly held and the tool is pulled up that there is ample room left for the cutters to come close together. In cutter No. 3 no such recess is on the spreading bearing. This recessed portion is not necessary in the type C cutter, or No. 1 or No. 2 cutter, and would just as well not be there, and it would be operative just the same as if *is* did not appear. I find no such recess in the Wilson cutter, but I [565] find that to make the cutter of the Wilson reamer operative that they had to cut away the lower extended inner portion of the Wilson cutter, so as to allow the cutters to come close enough together that they could be entered into the casing. Also, the upper part of the cutter-shank has been gradually decreased to prevent its coming in contact with the walls of the casing. I find in the O'Donnell & Willard patent a material corresponding action with the Wilson. That is to say, that the central spreading bearing or wedge shaped partition 3 has

(Deposition of Thomas J. Griffin.)

an upwardly and outwardly tapered bearing forming a wedge shape. This corresponds to the prongs of the Wilson reamer and has identically the same action and is for the same purpose. In the O'Donnell & Willard patent there is no V-shaped notch for the cutters to expand and contract over. After carefully examining the O'Donnell & Willard patent, I cannot find any feature involved in the O'Donnell & Willard patent which corresponds to any part or piece of the Double reamer. The cutters work in a conical shaped socket or bowl. There are no dovetails nor are there any notches, nor is there a single-piece spring-actuated mandrel. In fact, there is no part that has any similarity to the Double. In Swan patent No. 683,352, after carefully examining the same, I find no cutter-shanks, no V-shaped notches, which compare with the Double reamer; but I do find upwardly and outwardly inclined planes on the reamer body for the purpose of expansion of the cutters identically the same in action and a counter part of the Wilson reamer, after the Wilson passes over the lower end of the prongs. The only resemblance there is in the Double reamer to the Swan, is, that it has dovetails within the reamer body proper, and it forms a bearing throughout the inner face of the cutter. The lower portion of the spring-actuated rod is slotted similar to the Double, and the key similar to that used in the Double. The dovetails on the body [566] of the Swan are upwardly and outwardly inclined. The dovetails of the Double are upwardly and inwardly inclined. The dovetail

(Deposition of Thomas J. Griffin.)

of the Wilson are parallel to the body. The slotted extension of the Swan is similar to that of the Double for the purpose of allowing the key to move upwardly and downwardly in the expansion and contraction of the lugs. The impact of the blow is received similarly also to the upper part of the cutter in the Swan reamer. The same can be said of the Double shank as it receives its blow at the upper end of the shank. The O'Donnell & Willard in this respect is different. It receives no part of the impact blow upon the upper portion of the cutter, but it receives it at 15, which is provided with a shoulder to fit against the lower end of the stock when the shank is fully seated in the tapering socket, and this is the point in which it receives its blow. There is no comparison between the Wilson or Double with the Swan or O'Donnell & Willard. In the Double of all types in the slotted extension there is an inner bearing for the purpose of the inner surface of the cutter being in contact with it at all times, and especially at its upper and lower end. There is no such metal in the body of the Wilson reamer, and by placing the Wilson cutter in the body the upper end will at once drop. No such action is found in the Double. The only thing that keeps the Wilson cutter-shank expanded against the dovetails is the tee-bar, the tee-bar receiving the inner impact of the cutter or forming a bearing by which it keeps it from dropping across the body. There is no such action in any Double reamer, nor the O'Donnell & Willard, nor the Swan.

(Deposition of Thomas J. Griffin.)

Q. (By Mr. LYON.) 26. You have referred, Mr. Griffin, to the cut in the back of the thrust-bearing of the cutter of the Double underreamer, both as it exists in the old style cutter No. 1 and in the cutter of type C, and have stated that you have used in actual underreaming reamers of the Double type having these cutters. From your own experience, what was the purpose of such cut in the bearing surface? [567]

Mr. BLAKESLEE.—Objected to as calling for a conclusion on the part of the witness and not for a statement of fact.

A. There is only one purpose for this cut-away portion, and that is to allow the reamer to expand and contract over the lower portion of the body.

Mr. BLAKESLEE.—We move to strike the answer out on each of the grounds stated in the objection, and also as not responsive to the question.

Q. 27. (By Mr. LYON.) And why is this cut necessary, then?

A. It is not absolutely necessary, as I testified in my previous answer. The intent and purpose is to allow the cutters to come close together when they are in contracted position.

Q. 28. You have referred to an I-bolt. What part does that I-bolt play in connection with this longitudinal cut?

Mr. BLAKESLEE.—Objected to as leading and suggestive.

A. As I have previously testified in my previous

(Deposition of Thomas J. Griffin.)

answer, it was for the purpose of collapsing around the I-bolt and coming closely together, and that the only time this ever happens to be necessary is when the cutters have been pulled down in coming out of the casing and held there by the U-shaped ring, and it is desired to remove the cutters. This cut-away portion then is brought into use and gives ample room for the screwing in of the I-bolt.

Q. 29. (By Mr. LYON.) I believe you have stated that you have actually used in oil wells reamers like the reamers of Double Improved reamer and cutter.

A. Yes, sir.

Q. 30. Referring to the bits of this exhibit, what is the purpose of the longitudinal groove in the bearing surface of such cutter?

Mr. BLAKESLEE.—Objected to as calling for a conclusion and not for a statement of fact, as the question involves design [568] and not use and the witness is not qualified further to testify to such design.

A. For the purpose of allowing room for the I. B. bolt
~~bow~~ to pass for screwing up in the spring-actuated mandrel.

I. B.

summing up

Q. 31. (By Mr. LYON.) In ~~some of~~ your testimony would you say that there have been any changes in the principle of action or mode of expansion or contraction of the cutters in Complainant's Exhibit Type "F" Reamer from that of

(Deposition of Thomas J. Griffin.)

the old style Double reamer? If so, state in what regard.

Mr. BLAKESLEE.—Objected to as calling for a conclusion on the part of the witness and not for a statement of facts, and not for further testimony, but being an attempt to place an arbitrary interpretation upon the testimony given by the witness. On the further ground that the witness is not qualified to answer the question. A. Absolutely not.

Q. 32. (By Mr. LYON.) Referring to the old style Double cutters Nos. 1, 2 and 3, Defendant's Exhibits, have you compared the inward thrust-bearing of these cutters with the relative width of the inthrust bearings of the cutters of type F?

A. I have.

Q. 33. What have you found by such comparison?

A. I found that there is no difference, but that, to the contrary, the old style cutter No. 1 will fit and expand and contract in type F reamer.

Mr. LYON.—The witness illustrates this with the said exhibit.

Q. 34. You do not find that this is a perfect fit, do you? A. No, sir.

Q. 35. What would be necessary to make it a perfect fit?

A. To shorten the shank and shorten the added dovetail. [569] That is all it requires to make that a perfect fit.

Q. 36. Now, with regard to any rocking action sidewise of the cutter, would there be any greater

(Deposition of Thomas J. Griffin.)

rocking action in this old style Double cutter No. 1 in its reamer, or as you have fitted it into the body of type F, than there is in the type F reamer with the cutter thereof in place? A. No.

(By consent of counsel for both parties an adjournment is now taken until to-morrow, Thursday, July 29, 1915, at ten o'clock A. M.)

Office of Frederick S. Lyon, 504 Merchants Trust Bldg.

Los Angeles, Cal., Thursday, July 29, 1915.

10 o'clock A. M.

This being the time and place to which the further taking of proof on behalf of defendant was continued, proceedings are now resumed.

Present: FREDERICK S. LYON, Esq., Solicitor for Defendant.

RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

THOMAS J. GRIFFIN, recalled.

Direct Examination (Resumed).

(By Mr. LYON.)

Q. 37. Referring to Complainant's Exhibit Type "F" Reamer, based upon your experience with underreamers, what do you say as to such tool being a safe or effective tool for use in underreaming with the block and pin removed from the lower end thereof?

Mr. BLAKESLEE.—Objected to as calling for a conclusion and not for a statement of facts, based on his experience.

(Deposition of Thomas J. Griffin.)

A. The underreamer type F with the block and pin removed would not be a safe underreamer to run in a hole for the purpose [570] of reaming. It

would expand and contract, but there is not

I. B.

sufficient metal left for wearing purposes and would not be safe to operate. In fact, I would not run it into a hole.

Q. 38. (By Mr. LYON.) With the block and pin in the lower end of Complainant's Exhibit Type "F" Reamer, how does this reamer compare in the construction of the bits and the mode of expansion and contraction of the bits, with the Wilson reamer of Complainant's Exhibit Wilson Patent?

Mr. BLAKESLEE.—Objected to as calling for a conclusion and not for a statement of fact, and on the further ground that the witness is not qualified to make the comparison.

A. There is no comparison in the bits or lugs of the type F reamer of the Wilson. The mode of expansion and contraction is different in the Wilson reamer, and the type F. In the type F reamer the hole in the body of the reamer has been enlarged for the purpose of allowing a spring-actuated rod to be placed in the reamer from the bottom, thus cutting away a portion of the slotted extension sufficient to allow this spring-actuated rod to enter the bottom of the reamer. The slot still remains identically in this type F reamer as it does in the old-style Double type C, D and E, and this slot has been closed by a block and pin, thereby making the bottom end of

(Deposition of Thomas J. Griffin.)

the type F reamer a solid portion, enabling the cutter to contact clear across its expanding bearings. This portion of the cutter and sides of the spreading bearing at all times ride upon this inner portion the same as in all the other previous types of Double reamers. The block and pin take the place, when in position, of the solid portion in the old-style Double C, D and E, and becomes solid metal. In the Wilson reamer there is no such bearing surface on the inner portion of the body. There is no spreading surface in the inner portion of the cutter; but there are two separately constructed bearing faces on their outer surfaces which are a natural sequence of cutting the [571] hollow off in the shape of the Wilson reamer, and the Wilson reamer could not be used with any other kind of cutters than its present cutter, nor could it be decreased in width, for the reason that it would have no bearing surface. In the type F reamer, the same as in all of the types of the Double reamers, the reamer cutter can be increased or decreased in width as desired. It is a well known fact among experienced oil drillers that it matters not how wide a cutter is if the cutter does not come in contact with the reaming surface, for the reason that the arc of the circle of the reamer cutter is not a true circle. Therefore, the central or about two-thirds of the Wilson cutter is about all that comes into contact with the surface or rock to be reamed. Therefore, in comparing the two reamers and carefully considering the wear on the body of the Double

(Deposition of Thomas J. Griffin.)

and the prongs of the Wilson with the type F reamer and the Wilson, when the lug or shank of the Wilson cutter is placed in the body the top portion of the cutter will drop through the slot, making it inoperative unless the tee-bar is placed therein. With the Double type F, or all other types, it is not necessary to have the tee-bar or the spring-actuated rod in position, as the reamer lug will readily expand or contract over the spreading bearings.

Q. 39. (By Mr. LYON.) Have you made any comparison of the expansion of the cutters in reaming position in Complainant's Exhibit Wilson Underreamer, Complainant's Exhibit Type "F" Underreamer, Complainant's Exhibit Type "C" and Type "D" Reamers, which I understand are the same size reamers?

A. Part of your question is erroneous, inasmuch as the Wilson reamer is a 4-inch reamer, and the type C is a 4-inch reamer, and type D is a $4\frac{1}{2}$ -inch reamer, and type F is a $4\frac{1}{2}$ inch reamer. Type D, $4\frac{1}{2}$ inches, reams a hole $6\frac{1}{4}$ inches in diameter. Type F, $4\frac{1}{2}$ inch reamer cuts a $6\frac{1}{4}$ inch hole. Type C, 4-inch reamer, cuts a $5\frac{3}{4}$ inch hole. Wilson's [572] 4-inch reamer cuts a $5\frac{3}{4}$ inch hole, the same as type C.

Q. 40. I notice that in this Complainant's Exhibit Wilson Reamer, the bits thereof are marked " $4\frac{1}{2}$, 15 pounds." What have you to say in regard to such marking?

A. It appears to me that the lugs have been marked for a special purpose, as this reamer body is

(Deposition of Thomas J. Griffin.)

the usual size to run in a 4-inch hole, and that the lugs are marked erroneously $4\frac{1}{2}$.

Q. 41. Referring to the so-called safety bolt Wilson reamer which in Complainant's Exhibit Wilson Patent is designated by the reference numeral 11, in what manner, if at all, does this so-called bottom bolt 11 of the Wilson reamer correspond in function or action in the reamer to the bottom bolt of Complainant's Exhibit Type "F" Reamer, either with or without the block in place upon the bolt and held in position in type F reamer upon such bolt?

A. The bolt 11 in the Wilson reamer is placed in a different position from that in type F, which is compulsory in the design of this tool, as it could not be placed nearer the lower portion. Its function is to prevent the spreading of the forks or prongs apart, which happens in drilling in boulders and has been known to cause the breakage of one of the prongs and being lost in the hole. Its object is to prevent, as I have before testified, the forks springing apart further, to prevent the lossage of the tee-bar, spring and cutters. In type F the bolt in the bottom performs an altogether different function. It is placed close to the lower portion of the prongs as a retaining means for the block, and has no function to perform in expansion or contraction of the reamer lugs. The Wilson lugs have been cut away, as I have before testified, and do not show on the finished product as in the patent. By placing the cutters in the body of the reamer in a contracted position it is clearly demonstrated that the

(Deposition of Thomas J. Griffin.)

cutters would not contract sufficient to get [573] inside of a 4-inch casing which this reamer body is expressly manufactured for, unless the inner portion was cut away and the retaining bolt in the lower portion of the prongs of the Wilson reamer had to be placed up high to give sufficient room for the collapse and expansion of the reamer. There is no such reason to be given in the type F.

Q. 42. You have referred to the breakage of one of the prongs of the reamer in under-reaming. To what reamer do you refer? A. The Wilson.

Q. 43. Is this your own personal experience?

A. Yes, sir; I saw the reamer.

Q. 44. Why is it that the block and its retaining bolt may be used in the Double reamer type F, and, as you say, no such block could be used between the prongs of the Wilson reamer, nor could a large bolt be used across these prongs at the extremities of the prongs.

A. As I have before testified that the cutters come close together in the 4-inch Wilson reamer, and a portion of the lower part of the Wilson cutter-shanks have been cut away or beveled, to allow them to come close enough together to get into the casing. The bolt hole could not be placed at a lower point than it is, nor could there be a larger bolt placed in this body, owing to the fact that, as it would necessitate cutting away the shanks of the cutters so that they could collapse over or close over this bolt. The Double type F reamer is a differently constructed and differently designed tool altogether, as there has

(Deposition of Thomas J. Griffin.)

been ample provision made for the expansion and contraction of the lug by the V-shaped notch on the inner side of the cutter, allowing the cutter sufficient room to expand and contract over this block or solid portion of the reamer. And any bolt or pin driven or screwed in place in the lower portion of the Double reamer will retain [574] this block in position, supplying the necessary intrust bearing; and this hole is limited relative to its position by the width of the block, and that is controlled by the position of the V-shaped notch formed in the back of the cutter. To clear up any doubt in regard to the size of this Wilson reamer, if it is a $4\frac{1}{2}$, as the cutters indicate, there is no casing made that would follow the hole. Therefore, it must be a 4-inch, with a mistake in marking on the cutters. I cannot say whether it was intentional or done by mistake.

Q. 45. How many Wilson underreamers have you seen in your experience in this part of the country? A. A great number.

Q. 46. How does the position of the bolt 11 of the Wilson patent as exemplified in Complainant's Exhibit Wilson Underreamer compare with the position of such bolt in the various Wilson underreamers that you have used and inspected and seen?

A. The position is relatively the same in all their reamers.

Q. 47. Have you ever seen any Wilson underreamers in actual use or at any oil well or supply store wherein the bottom bolt 11 was at the extreme lower end of the prongs? A. I never have.

(Deposition of Thomas J. Griffin.)

Q. 48. You have explained to us the construction and the mode of operation and the inter-relation of the parts of the Wilson Reamer with particular reference to this bolt 11, and also similarly discussed Complainant's Exhibit Type "F" Double Reamer. Will you now please state whether in your opinion as a mechanic the bolt or bolt and block of the type F Double reamer performs the same or a different function than the bolt 11 of the Wilson reamer.

Mr. BLAKESLEE.—Objected to as calling for a mere guess [575] on the part of the witness and not for a statement of facts even for an expert, assuming that the witness was qualified to testify as an expert.

A. As I have testified previously, this bolt performs an altogether different function. They do not compare in any respect one with the other, nor do they perform the same functional part.

Q. 49. (By Mr. LYON.) You have stated that in Complainant's Exhibit Type "F" Double Underreamer, the central bore of the spring-actuated rod has been enlarged over the same hole in the old Double or in Complainant's Exhibit Type "C" and "D." Has there been any change in the mode of expansion or contraction of the reamers as exemplified in type F? If so, in what manner.

A. Absolutely there has been no change in the mode or operation in expansion and contraction.

Q. 50. I call your attention to the bottom of Complainant's Exhibit Type "F" Reamer and to the

(Deposition of Thomas J. Griffin.)

fact that evidently the metal has been cut across at the bottom, while in Complainant's Exhibit Type "C" a portion of the metal has been left at the sides. What difference, if any, has this made in the mode of expansion or contraction of the reamer or in its operative condition? A. None whatever.

Q. 51. To what do you attribute this slight change in Complainant's Exhibit Type "F"?

A. A mere matter of detail in the manufacture.

Q. 52. Detail for what purpose?

A. In the planing off of the lower portion, not necessitating the cutting off as deep as a second dovetail or as long a second dovetail in the body, reducing the amount of work materially.

Q. 53. Then do you mean it is merely a convenience in machining? A. Yes, sir.

Q. 54. What difference in the operation of Complainant's [576] Exhibit Type "F" or in the inter-relation of parts would there be if the metal at the extreme outer side of the thrust bearings had been left on the body of type F in the same manner as it had been left in type C?

A. There would be no difference in the operation of the type F and the type C. The mode of operation is identical. As I testified previously, the metal has been cut away there for convenience, and it saves time in the manufacture of the reamer body. It does not require as long a lower dovetail in the type F as it requires in the type C. It is simply a convenience, and there is no difference in the mode of operation of the parts.

(Deposition of Thomas J. Griffin.)

Mr. LYON.—You may cross-examine.

Cross-examination.

(By Mr. BLAKESLEE.)

XQ. 55. How long were you with the Lee Iron Works? A. About a year and a half.

XQ. 56. When was that that you were with the Lee Iron Works? A. In '97 and '98.

XQ. 57. How long were you in the blacksmith shop of the Gulf, Colorado and Santa Fe Railroad Company at Galveston? A. About two years.

XQ. 58. When was that?

A. 1896 and seven, if my memory serves me right. I may err a little bit as to the exact date. My records have all been destroyed in 1900, during the storm of 1900, and I have no records that I could go back to.

XQ. 59. When were you with the Ames Iron Works in Oswego, New York?

A. From January, 1876, to 1880.

XQ. 60. What were you doing between the years 1880 and 1896? [577]

A. Part of the time I was drilling water wells and part of the time in the mercantile business.

XQ. 61. What course of study did you take before going into the machine business?

A. I was in what was called the ordinary school, I went into what at that time we called the different readers or different grades and until I had passed through McDuffy's Fourth Reader and the old Smith's Arithmetic, and, by the way, the blue back speller.

(Deposition of Thomas J. Griffin.)

XQ. 62. Did you take any course in higher mathematics at all? A. Only myself studying.

XQ. 63. What course did you take?

A. I never took any you might say, unless you want to allow me to qualify and say that I studied higher mathematics.

XQ. 64. What higher mathematics?

A. Well, I studied arithmetic, and I studied algebra without any teacher except what I could get from Mr. Leonard Ames.

XQ. 65. Did you study geometry? A. No.

XQ. 66. Do you know what an arc is—a-r-c?

A. Being a man of ordinary intelligence, I believe I do.

XQ. 67. Please define it.

A. An arc is a portion of a circle.

XQ. 68. It is not a whole circle, is it?

A. If you want to call it a whole circle you can; and if you don't, you can call it a part of a circle.

XQ. 69. What do you understand the term "interpret a patent" to mean?

A. To interpret a patent is to read it and thoroughly understand it by the drawings and descriptive matters thereto.

XQ. 70. And when you understand it you think that means [578] that you interpreted it?

A. I think so. I think from a description that I could build one. I have made many things in a machine-shop from the description.

XQ. 71. Did you ever make a working drawing?

A. Yes; I have made a working drawing.

(Deposition of Thomas J. Griffin.)

XQ. 72. Did you ever make a shop tracing?

A. Yes, sir.

XQ. 73. When and in what shop?

A. In the Ames Iron Works and Lee Iron Works, and I have made many for myself.

XQ. 74. Where did you put in your apprenticeship in machine-shop work?

A. Oswego, New York.

XQ. 75. With the Ames people? A. Yes, sir.

XQ. 76. And worked there, too? A. Yes, sir.

XQ. 77. What sort of machines did the Lee Iron Works have at Galveston in the shop you were foreman of?

A. Well, we had probably 10 or 15 lathes, some 4 or 5 planers, emery wheels, drill presses, large forging shop and foundry, such as usually found in any first-class machine shop of that time.

XQ. 78. What do you mean in your testimony by the terms "forks" on the body of the reamer?

A. Such as is shown on the Wilson.

XQ. 79. What definition would you give to the term "fork"? Suppose you were telling somebody that the Wilson reamer had a forked lower end.

A. I would say in describing this to an ordinary man that never saw it that it was a piece of iron, round on its outer [579] surface, that it was bored out on the inside and that then it was placed on a milling machine, probably, or it might be chiseled out or sawed out, a slot beginning at its lower portion and extending up anywhere from 1 inch to 1 foot, or, you might say, almost through the body,

(Deposition of Thomas J. Griffin.)

and it would still be a fork. I would term it a fork if it was only cut back an inch.

XQ. 80. You would tell him all that if he asked you what you meant by a forked body?

A. I would have to be governed by the amount of intelligence that he appeared to have. If he appeared to have more than I have, I don't know what I would say.

XQ. 81. Suppose you were describing to the same individual the reamer type F, and wanted to tell him it was a forked body. What would you tell him?

A. If I were describing the reamer type F, I would describe it as a piece of round metal with a hole drilled in from the bottom of a sufficient size to allow a rod or bar or anything else that I desired to push into it, but not of a sufficient size to eliminate the flat portion of that slot, as it is in the Wilson, as it is clearly done in this reamer.

XQ. 82. Now, if you told him that both of these bodies had forked lower ends and he asked you what you meant by forked lower ends, would you tell him all that you have stated in the last two answers?

A. Yes; in addition to that I would tell him that it was not a fork, as the hole had been drilled out at the lower portion sufficiently large to get in the inner working parts and that then there was a block made that just fit that hole, and a retaining means by pin or bolt put in there to keep them from dropping out.

XQ. 83. Supposing you were not considering the block at all or the pin and block, and you were telling him that both [580] of these reamer bodies

(Deposition of Thomas J. Griffin.)

had forked lower ends, and he asked what you meant by the term "forked." Would you tell him all that occurred in the shop in making these things?

A. I should not certainly tell him that the Double was a fork. It is not a fork in any sense.

XQ. 84. Even with the plug and pin out?

A. Then it becomes a fork, with the block and pin out. But it would not be an operative reamer, and I could not describe it as an operative reamer with the block and pin out.

XQ. 85. Is the Wilson body a forked body with the cross-bolt 11 out? A. Yes.

XQ. 86. Is it with the cross-bolt 11 in?

A. No; only up to the bolt, and, yes, it is forked up to the bolt. But in the Double there is no such fork.

Q. 87. Even up to the bolt?

A. No, because the block is in it.

XQ. 88. Well, placing the pin as in the Wilson, isn't it a fork up to the bolt as you say? A. Yes.

XQ. 89. What difference does it make if the pin and block are in the Double reamer, so that you cannot call that a fork up to the pin and block?

A. There is no extended portion. The block comes straight across from the lower portion of that body, and there is no block with a pin and bolt in the Wilson.

XQ. 90. No fork above the pin and bolt?

A. There is not; there is a hollow slot.

XQ. 91. What kind of a slot?

A. A hollow slot.

(Deposition of Thomas J. Griffin.)

XQ. 92. What sort of a slot would one be that was not hollow? [581]

A. The word "hollow," as I understand, means a portion larger than the slot. A slot would be straight through, probably, or, I should say, with parallel lines on each side. A hollow slot is one that has not parallel lines on the side.

XQ. 93. What is the source of your information as to these definitions as to slot and hollow slot?

A. Study and the English language.

XQ. 94. And you wish to use and be understood as using the term "hollow slot" and "hollow" in the sense that they are found to be defined in the dictionary?

A. I wish to use the term "hollow" and
in

I.B. "slot" as defined and known ~~among~~ oil-well tool parlance. Whether that is correct with the dictionary, I have never looked it up, as there is so many words and usages in oil-well tool and well drilling parlance that the ordinary highly educated inexperienced gentleman would not know what a fellow was talking about.

XQ. 95. Well, we will try to treat those people gently and let them out of the discussion. What other oil-well tools have hollow slots besides reamers?

A. Well, we have a bootjack.

XQ. 96. Is that slot also hollow?

A. No; that is a slot.

XQ. 97. Not a hollow slot?

A. Sometimes it is. Some of them are made with

(Deposition of Thomas J. Griffin.)

a hollow, and they are forked.

XQ. 98. What difference is there between them when they are hollow slotted and when they are merely hollow?

A. The central portion of the hollow is greater than the slot.

XQ. 99. Then there are two separate things, one is a hollow and the other is a slot?

A. That is what I would term it. [582]

XQ. 100. And if you merge the two together you would not have both of them, would you?

A. Yes; you would have a hollow slot.

XQ. 101. By looking at a hollow slot when they were not separate, how would you be able to tell whether it was a hollow slot or a plain slot that was not hollow?

A. If I couldn't see it and see that it was hollow and see that it was a slot, I wouldn't know unless I could feel of it.

XQ. 102. Looking at the space in type F reamer, namely, the space above the block and pin holding the block, will you see if you can feel the hollow slots there?

A. It is unnecessary to feel. I can see that it is a hollow and a slot.

XQ. 103. Are you sure it is not a hollow slot?

A. If you wish to call it that.

XQ. 104. You have told me there was such a thing as a hollow slot and also such a thing as a plain slot. Please tell me whether this is a plain slot or a hollow slot.

(Deposition of Thomas J. Griffin.)

A. This is a hollow slot and not a plain slot.

XQ. 105. And how would you change it to make it a plain slot?

A. I hold up in plain view of counsel the tee-bar of the Wilson reamer, and I will say that that has a slot, and there is no hollow. In the Double reamer type F there is a hollow, and this tee-bar is a slot, the way I expect to give my testimony. If that is not correct as counsel sees, he will take notice that all my answers will be given that the tee-bar has a slot therein and that the Double reamer body has an additional hollow.

XQ. 106. Do you mean the Double reamer body of type F reamer? A. Yes, sir.

XQ. 107. Now, please point out the hollow which is additional [583] in this body.

A. It has a central bore. To give it exact, I will do so, so that there will be no mistake in what I am talking about and what counsel means or appears to mean. The hollow in the type F reamer is 2 1/6 inches in diameter. The slot is 1 1/2 inches across it. Making a difference of 9 1/6 inches between the bore and the slot.

XQ. 108. You mean the slot is 1 1/2 of the hollow?

A. Yes, sir.

XQ. 109. What is there between the hollow and the slot?

A. What is there between the hollow and the slot?

XQ. 110. Yes; so that we know where the one starts and the other breaks off.

A. There is a bearing face that prevents the inner

(Deposition of Thomas J. Griffin.)

portion of the cutter from slipping through into the hollow.

XQ. 111. Then I take it, there is a slot on each side of the hollow, is there? There are two of these bearing faces?

A. It forms two bearing faces and it is not a slot on each side. It forms two sides. The slot would have to form two sides or it couldn't be a slot.

XQ. 112. There are two slots, one on each side of the hollow? Is that it?

A. No, I can't see but one slot. I fail to find but one. There is an additional slot above the other for the entrance of the key. There is only one slot in the bottom of the reamer.

XQ. 113. And is there only a slot on one side of the hollow and not on the other?

A. No; there is a slot on each side for the introduction of the cutter on each side.

XQ. 114. One slot for each cutter?

A. Yes, sir.

XQ. 115. That makes two slots?

A. Yes. [584]

XQ. 116. Now, referring to Complainant's Exhibit Wilson Reamer, do you find two slots and a hollow in that between the prongs at the lower end?

A. Yes.

XQ. 117. Where are they?

A. Located, I think, the same as it is in the Double, excepting that the inner face of the slot is completely cut away by the hollow, and, therefore, a partial slot on each side of the Wilson reamer.

(Deposition of Thomas J. Griffin.)

XQ. 118. But still you call it a slot?

A. Yes, sir.

XQ. 119. Then in these respects—

A. But the bearing surfaces have been cut away and there is no inner bearing surface.

XQ. 120. But there is still a hollow?

A. Yes, a hollow.

XQ. 121. Then in these respects, namely, that there is a hollow and a slot on each side of it, type F reamer and Complainant's Exhibit Wilson Reamer compare and correspond, do they not?

A. No; they do not. There is a vast difference, as the hollow in the Wilson reamer has eliminated the inner bearing surface of the slot.

XQ. 122. Then I suppose it has not left anything to show where the slot leaves off and the hollow begins; is that so?

A. Yes; there would naturally have to be a point, or there would not be any slot.

XQ. 123. Where is that point in the Wilson reamer?

A. It is located $9 \frac{1}{6}$ of an inch on the inside of the slot as the beginning point of the hollow.

XQ. 124. Then you are quite sure that the hollow is still there and the slot on each side of it?

A. There is no question about that. I have many times testified that there is a hollow and a slot there.
[585]

XQ. 125. And likewise, there is a hollow and a slot on each side of it at the lower end of the type F reamer?

(Deposition of Thomas J. Griffin.)

A. Yes; but not the same slot, by any means.

XQ. 126. But still a slot?

A. Yes, when the bolt and slot are removed.

XQ. 127. Now, we have got these two reamers corresponding as to the hollow and the slot.

A. No; I should say that we have not got them corresponding in the hollow and the slot, because there is a great difference between the hollow and the slot of the Double reamer and the hollow and slot of the Wilson reamer.

XQ. 128. We don't discuss the difference, but take it that there is a hollow and a slot or two hollows and two slots at the lower end of each.

A. All right.

XQ. 129. When the bolt of each reamer and the block of Type F is off of the fork—

Mr. LYON.—In this line of questions, let the record show that both counsel and the witness are referring to Complainant's Exhibit Wilson Reamer and Complainant's Exhibit Type "F" reamer. The latter is the Double reamer.

XQ. 130. (By Mr. BLAKESLEE.) Now, what differences occur with respect to the hollow and the two slots of the type F reamer when you put the bolt in place between the lower ends of the prongs?

A. Such a hypothetical question as counsel asks would be in the Double an inoperative construction. If the bolt alone were placed in the Wilson reamer and the bolt alone placed in the Double reamer there would be a half-inch slot below the Double type F that was entirely filled up, and in the Wilson there

(Deposition of Thomas J. Griffin.)

is $1\frac{3}{4}$ inch of fork exposed.

XQ. 131. That part is slot, is it, and not hollow, in each case? [586]

A. No, sir; that part is hollow in the Wilson.

XQ. 132. What is it in the type F?

A. It is hollow and slot. Wait. Yes, it is hollow. The bolt goes through the hollow and not through the slot.

XQ. 133. Now, if you add the block to the pin or bolt in type F, have you changed the hollow and slot in any particular in that respect?

A. Yes. There is then no hollow in the reamer. It becomes closed. The slot still remains.

XQ. 134. And then it is not a hollow-slotted extension at the bottom any more?

A. It is not a hollow-slotted extension at the bottom.

XQ. 135. Now, when the bolt is out of the Wilson reamer and the bolt and block are out of the type F reamer, irrespective of whether you call it a hollow or a slot, or two hollows and a slot in either case, you can run your hand right up between those prongs in one big open space?

A. Sure you can.

(By consent of counsel for both parties an adjournment is now taken until 2 o'clock P. M. of this day at this same place.)

(Deposition of Thomas J. Griffin.)

Office of Frederick S. Lyon, 504 Merchants Trust
Bldg.,

Los Angeles, Cal., Thursday, July 29, 1915.

2 o'clock P. M.

This being the time and place to which the further taking of proofs on behalf of defendant was continued, proceedings are now resumed.

Present: FREDERICK S. LYON, Esq., Counsel
for Defendant.

RAYMOND IVES BLAKESLEE, Esq.,
Counsel for Complainant. [587]

THOMAS J. GRIFFIN, recalled.

Cross-examination (Resumed).

(By Mr. BLAKESLEE.)

XQ. 136. You have testified this morning in Complainant's Exhibit Wilson Reamer you found a hollow and a slot on each side of it for one of the cutters. I call your attention to your testimony given yesterday in which you make the following statement: "In the Wilson reamer patent I find a hollow-slotted extension with the slot completely cut out by increasing the bore of the reamer." How do you reconcile those statements?

A. I had reference to the slot being cut out at the end of the reamer.

XQ. 137. Do you mean at the end of the reamer between the prongs? A. It terminates in prongs.

XQ. 138. Well, do you mean that the slot is cut out at the end of the reamer between the prongs?

A. Yes, and enlarged for the purpose of forming spreading bars for the cutters to bear against.

(Deposition of Thomas J. Griffin.)

XQ. 139. The slot is completely cut out and also enlarged, is it?

A. It is cut out making an open end.

XQ. 140. And then if it is cut out and there is an open end there is not any slot between the prongs; is that correct?

A. That is correct when the bolt is out.

XQ. 141. And when you put the bolt back in you have a slot, do you?

A. You have an obstruction. It is not an open mouth.

XQ. 142. Do you have a slot? A. Yes, sir.

XQ. 143. Then what was it you meant when you said. "In [588] the Wilson Reamer and Patent I find a hollow-slotted extension with the slot completely cut out?"

A. I will have to have the testimony placed in front of me and read it myself to see what the previous question was and the continuation of the answer.

XQ. 144. You may read it, all or any part of it. You mean your copy of the testimony?

A. Yes, the part that you have reference to. (Referring to testimony, p. 419.) This says in comparing the Double type F reamer with the Wilson type reamer. When I said that the slot was cut out, you could construe that that I left off one word, and that is, the inner portion of the slot was completely eliminated by the large bore in the central portion of the Wilson reamer.

XQ. 145. Then the portion of the slot above the

(Deposition of Thomas J. Griffin.)

bolt or pin in the Wilson reamer is entirely eliminated, is it?

A. No, it is not. The upper portion of the slot still remains.

XQ. 146. What part of the slot is eliminated?

A. As I testified this morning, there still remains 9/16ths of an inch of the slot.

XQ. 147. Then the slot is not completely cut out in the Wilson reamer?

A. No. The way that you want me to testify, it is not. But in comparing the Double reamer with the Wilson it is, because the inner sliding surfaces of the slotted extension of the Double reamer still remain and it does not remain in the Wilson, and it never was there.

XQ. 148. Then that part of the hollow-slotted extension never was in the Wilson reamer, was it?

A. It never was in the Wilson reamer; that is, unless there had been a small boring tool placed in the reamer and it was bored out, a smaller hole than is shown in the hollow. If it was counter-bored, and bored a second time, it was bored out. [589]

XQ. 149. You don't know whether that was done or not, do you?

A. I do not. I never saw one of them made.

XQ. 150. Then you have not a hollow-slotted extension in the Wilson reamer?

A. Yes, sir, you have a hollow-slotted extension.

XQ. 151. In the Wilson reamer? A. Yes.

XQ. 152. In spite of the fact that the slot is completely cut out, is that so?

(Deposition of Thomas J. Griffin.)

A. At the end of it, yes.

XQ. 153. Below the bolt?

A. Below the bolt, yes.

XQ. 154. Above the bolt? A. No.

XQ. 155. There are two slots above the bolt, are there not? A. One on each side.

XQ. 156. All forming one big open space between the forks?

A. Yes, terminating at the largest diameter of the inner bore of the body.

XQ. 157. Now, supposing this slotted extension was not a hollow-slotted extension, but was a solid slotted extension, which would it then resemble—the Double reamer or Double Patent No. 1 or the O'Donnell & Willard patent?

A. It would not resemble either of them unless it had the inner bearing surfaces left in it as the Double, the Swan, and would not resemble the O'Donnell & Willard at all because the spreading portion is removable. It is a screw wedge.

XQ. 158. And for that very reason, I suppose, it could not be considered at all to resemble Double patent No. 3, could it, to which the removable block 10 and hollow-slotted extension [590] 10' are shown?

A. I will agree with you if you will show me a bevel and a screw portion to the Double reamer working inside of a bowl.

XQ. 159. I do not care whether you agree with me or not; I ask you to answer the question yes or no, and you may have it read again if you wish.

(Last question read.)

(Deposition of Thomas J. Griffin.)

A. No.

XQ. 160. Then there is no resemblance between this Double patent No. 3 and the type F Double Reamer with the removable block, is there?

A. There certainly is. Every feature is there.

XQ. 161. Where do you find in the type F reamer the part 10' of Double patent No. 3 with the hollow in it and the slot for the key 8, the slot being surrounded with metal and the hollow being surrounded with metal?

A. I can't answer the question unless counsel gives me the patent and re-reads the question.

XQ. 162. The patent is in evidence.

A. It is called by number. I haven't it in my possession.

XQ. 163. The patent is in evidence and the exhibits are before the witness.

A. I haven't the exhibit and the number of the patent has not been called.

XQ. 164. I have given the number of the exhibit, Double patent No. 3. There is the exhibit. (Handling paper to witness.)

(Question read, as follows: "Where do you find in the type F reamer the part 10' of Double Patent No. 3 with the hollow in it and the slot for the key 8, the slot being surrounded with metal and the hollow being surrounded with metal?")

A. There is no such in type F at this particular point.

XQ. 165. When did you last drill an oil well?

[591] A. About three and a half years ago.

(Deposition of Thomas J. Griffin.)

XQ. 166. About March, 1912, was it not?

A. Something like that.

XQ. 167. What have you been doing since that time, principally?

A. Well, it was about January, 1912. Since that time, I have been working on different inventions of my own and looking after my interests.

XQ. 168. You have been more or less closely allied with the Union Tool Company, the defendant in this case, have you not?

A. No, not any more so than with the Oil Well Supply Company.

XQ. 169. Well, you have been allied with both of them, have you not?

A. Yes, inasmuch as to see that they have been manufacturing my inventions and placing them on the market—selling them.

XQ. 170. If you were interpreting the Wilson patent in suit, Plaintiff's Exhibit Wilson Patent, what would you wish it to be understood was meant by "an underreamer-cutter having two shoulders and a bearing face on the inner side of each of the two shoulders of the cutter" as set forth in claim 16 of that patent?

Mr. LYON.—That is objected to as not cross-examination, and as incompetent, not the proper subject of expert testimony, being a question addressed to an interpretation of a claim of a patent which it is the province of the Court to determine and construe and not that of an expert witness.

Mr. BLAKESLEE.—We are not asking that the

(Deposition of Thomas J. Griffin.)

witness usurp the function of the Court mentioned, but are putting the question on cross-examination pertinent to his answer to question 17 on direct examination.

Mr. LYON.—The further objection is urged that it is incompetent, no foundation laid, the witness not having been put in possession of the file wrapper and contents upon which the Wilson application for Complainant's Exhibit Wilson Patent was granted.
[592]

A. I would say in my interpretation of claim 16 that "an underreamer-cutter having two shoulders and a bearing face on the inner side of each of the two shoulders of the cutter" that Complainant's Exhibit Wilson Reamer Cutter has the two shoulders, and it has a face on the inner portion thereof that is not used.

XQ. 171. (By Mr. BLAKESLEE.) In other words, you would say that claim correctly describes what is shown in figures 7 and 9 of the drawing of the Wilson patent, would you?

A. Yes, excepting it is modified as shown in figure 8.

XQ. 172. In what way?

A. By the inner portion of the lower part of the cutter being cut away—beveled.

XQ. 173. Where? A. At 4³.

XQ. 174. You mean there is some cut away in the patent?

A. No. It is cut away, beveled, on its lower inner face.

(Deposition of Thomas J. Griffin.)

XQ. 175. Then in order to interpret the patent you would have to go outside of the patent and examine the metal cutter, would you?

A. Well, as disclosed in the drawing and described in the claim, the drawing and claim are correct?

XQ. 176. They agree with each other, do they?

A. Yes.

XQ. 177. And the shoulders of the cutters, you would take it from the patent, were flat on their inner faces right up to the tops of the shoulders, would you not, next to the shank of the cutter?

A. No, they are not flat up to the upper end; they are beveled off.

XQ. 178. Beveled off clear to the shank, are they, in the drawing of the patent?

A. It does not so show in figure 8. [593]

XQ. 179. And it does not so show in figure 9, does it?

A. No, nor does it show in any other figure that I can see. It shows it comes to a point, and the finished product shows it is rounding.

XQ. 180. You mean a point or an edge?

A. Well, either. An edge, I presume, would be more explicit.

XQ. 181. What is the difference between a point and an edge?

A. Well, a point would be as the point of a sword, and an edge would be the edge of the sword.

XQ. 182. In other words, a point is a point and an edge is an edge?

A. That is what I would call it. You can have this

(Deposition of Thomas J. Griffin.)

point an edge if you wish. It would be applicable in this instance.

XQ. 183. Would you rather call it a point or an edge in this instance?

A. Well, the upper point of the shoulder forms an edge.

XQ. 184. Do you find any such cutter in Defendant's Exhibit Double Patent No. 1 or Defendant's Exhibit Double Patent No. 2, or Defendant's Exhibit Double Patent No. 3? A. No.

XQ. 185. Do you find any such cutter in Defendant's Exhibit Swan Patent or Defendant's Exhibit O'Donnell & Willard Patent? A. No.

XQ. 186. Do you find in any of the three Double patents just referred to, or in the Swan patent, or in the O'Donnell & Willard patent a reamer body provided with prongs like the prongs 2 in the Wilson patent?

A. Nothing more than in a disassembled form of Double patent No. 3 I find prongs. [594]

XQ. 187. You mean the prongs 3-3'? A. Yes.

XQ. 188. Those prongs have no dovetails or ways, have they? A. No.

XQ. 189. They are simply for the purpose of supporting the block 10 with its hollow-slotted extension 10', are they not?

A. Yes, that is the purpose.

XQ. 190. And they do not co-operate in any way with the cutters in expanding or collapsing the centers, do they? A. The prongs?

XQ. 191. Yes. A. Yes.

(Deposition of Thomas J. Griffin.)

XQ. 192. What do they do in these respects?

A. Prevent the cutters from a side motion.

XQ. 193. But they do not guide the upper ends of the cutters in and out, do they, as the cutters collapse and expand?

A. That is their purpose, to guide them.

XQ. 194. In and out as the cutters rock?

A. No.

XQ. 195. And the in-thrust of the cutters is not imparted to them, is it? A. Yes.

XQ. 196. At what point? A. At 12.

XQ. 197. At 12 is a spreading-bearing on the lower end of block 10, is there not?

A. Yes. It imparts it there, and is directly connected by a pin or bolt to the prongs and the face 10, the inner face of the cutter and the face of the block 10, identically the same as in Double reamer type F. [595]

XQ. 198. Then in Double reamer type F the in-thrust is also applied to the prongs, is it?

A. In combination with the block, yes.

XQ. 199. And part of the upthrust in Double reamer type F is directly applied to the prongs, is it not? A. Very little.

XQ. 200. If the pin and block at the lower end of type F are out all of the inthrust is applied to the prongs, is it not?

A. Yes, but the reamer would be inoperative, valueless, useless.

XQ. 201. Why do you say that?

A. Because it would not stand the *grief* of the underreamer.

(Deposition of Thomas J. Griffin.)

XQ. 202. The prongs of the Wilson reamer stand the *griev* or strain, do they not, of the intrust?

A. Yes, that is a "hap."

XQ. 203. What do you mean by a "hap"?

A. It happened that way in the designing of the reamer. That is the only way it could be designed.

XQ. 204. Do you consider the prongs of the Wilson reamer any stronger than the prongs of the type F reamer?

A. They are not as strong. There is not so much metal in them.

XQ. 205. And therefore the prongs of the Double reamer type F you think ought to stand more

I. B. ~~grief~~
~~griev~~, do you?

A. It is owing to how you wish to place the answer. If you mean when the block is removed from the Double reamer type F, it would not stand any; but when the block and pin are in, it is much stronger. It would be impossible to use any such type cutter as the Wilson cutter in the type F reamer. It would be utterly impossible for any such cutter to be placed in the type F reamer. [596]

Mr. BLAKESLEE.—We move to strike out the portion of the answer beginning with "it would be impossible" as not responsive to the question.

XQ. 206. (By Mr. BLAKESLEE.) All of the intrust of the cutters in the type F reamer finally goes to the prongs, does it not?

A. I should say not.

XQ. 207. Does it go to the prongs 3-3' in Double patent No. 3? A. I should say not.

(Deposition of Thomas J. Griffin.)

XQ. 208. Where does it go to finally in each case?

A. It goes against the block. It is confined between the prongs of the Double reamer No. 3 and also the type F.

XQ. 209. None of it goes to the prongs in Double patent No. 3 directly, does it? A. No.

XQ. 210. And some of it does go to the prongs in type F reamer, directly, does it not?

A. A very small portion.

XQ. 211. Have you ever seen used Double reamer type F with the block and bolt out?

A. I have never seen the reamer type F in operation anywhere on any well; in fact, I have never seen but one Double reamer type F, and that is in this office, where it is an exhibit.

XQ. 212. Didn't you have something to do with designing that reamer?

A. Well, I don't know as I did.

XQ. 213. Don't you know that you did not?

Mr. LYON.—That is objected to as not cross-examination.

A. I cannot say that I did or did not.

XQ. 214. (By Mr. BLAKESLEE.) You mean you cannot say, or won't say? [597]

A. I can't say.

XQ. 215. Then you are not sure that you did not?

A. No, and I am not sure that I did. I certainly have laid no claim to it.

XQ. 216. You mean you have laid no claim by application for patent?

A. No, nor otherwise. The first that I ever heard

(Deposition of Thomas J. Griffin.)

of the reamer was told by Mr. E. C. Wilson when he accused me and Robert Bole of being the daddy of it, which is a matter of record in this case. I have never heard of it before. I did not know there was such a thing out.

XQ. 217. Then you did not take it as a compliment to be accused of getting up this reamer or assisting in it?

A. It was not a question of compliment.

XQ. 218. Do you think it is impossible, from what you gather in interpreting the Wilson patent that there is a maximum open space between the cutters to receive the loose material of slush at the bottom of the well or other opening during the operation of drilling?

A. I cannot conceive of what you mean, as they all receive the water and slush in the well, the detritus that is drilled up. It is bound to be full, and I cannot understand what you are driving at.

XQ. 219. What do you mean by them all receiving the slush?

A. Well, every reamer that I ever saw. I have never seen a water-tight reamer yet go in a hole.

XQ. 220. Is that all you make out of interpreting the Wilson patent in lines 16 to 20, inclusive, page 1, of the specification?

A. Yes, I will say that is the best interpretation I can put on it. There is certainly no object in it.

XQ. 221. Don't you think that it is an important [598] advantage of the Wilson reamer and Wilson patent reamer, as it is of the type F reamer, that you

(Deposition of Thomas J. Griffin.)

can withdraw the spring-actuated rod and cutters from the lower end or open mouth of the reamer and assemble them at or from the lower end or open mouth of the reamer, thus obviating the use of a "sub" or joint at the top of the body of the reamer in each case?

A. Why, that is the only way that—not the only way, but it is preferable to have a single-piece tool. The less joints you have in a tool, naturally, the less liability there is of unscrewing and loosening the lower portion.

XQ. 222. You do not find any such provision for assembling at the bottom of the reamer in Double Patents 1, 2 and 3, do you? A. No.

XQ. 223. You do not find any such provision in the Swan patent, do you? A. No.

XQ. 224. Parts of the spreading surfaces or shoulders of the cutters do act upon the lower ends of the prongs of the type F reamer during part of the expansion action in that reamer and take part of the intrust of the cutters. Is that not so?

A. Yes, that is true. There is a very small part of the cutter in contact with the prongs. As I have testified before, it will expand and contract over the lower part of the reamer body without the central block; but it will not be a safe reamer to run in a hole at all.

XQ. 225. Now, in reamers types D and E, and also in Defendant's Improved Double Reamer Cutters, there are sidewise extensions or shoulders of the cutters which engage with sidewise extensions on the

(Deposition of Thomas J. Griffin.)

lower ends of the bodies of those reamers beneath the dovetails, and taking part in the expanding actions of the cutters and collapsing actions, and also in the imparting [599] or inthrust to the bodies from the cutters. Isn't that so?

A. There is no such extended bearing on any of the reamers that you have referred to of type D or the improvement over them. The metal is simply cut away in there. That forms its own bearing without any effort on the part of anyone, allowing any width inner thrust bearing. That too may be designed as the shop practice may desire to place upon the bottom of the metal. There are no extended shoulders in the light that the Wilson reamer is. The cutters of the type D and improved type and the old style, four separate and distinct reamers, are still the same width and the bearing surfaces are practically the same.

XQ. 226. And do not the bearing surfaces extend further sidewise beyond the shanks in these three reamers mentioned in the last question than they do in any cutter shown in Defendant's Exhibit Double Patent Nos. 1, 2 and 3, if in fact they extend at all beyond the shanks in those patents?

A. As I have no drawing in detail of the two sizes or reamers of the different types I cannot answer your question intelligently. There is a 4 and 4½ inch reamer of the improved or type D and the type C before me. One is the 4 and the other is the 4½ inch, and there is no way by which I can ascertain from these exhibits which cutter would be the widest.

(Deposition of Thomas J. Griffin.)

But I will grant you that a wider bearing can be placed, if desired, on the type D or improved Double than there is on the type C.

XQ. 227. You mean a wider bearing on the cutter?

A. Yes. That is, on the extreme lower portion, only.

XQ. 228. That is, on the cutting bodies of the cutters? A. Yes.

XQ. 229. And are not those bearing surfaces broader on the cutters of type D and type E reamers than they are shown in Double patents 1, 2 and 3?

A. There may be a little difference in the width of them. [600]

XQ. 230. And they are broader, are they not?

A. The bearing surface?

XQ. 231. Yes.

A. Apparently they are a little broader.

XQ. 232. And that is true in the cutters of Complainant's Exhibit Improved Double Reamer Cutters, too, is it not? A. Yes.

XQ. 233. And these broader bearing surfaces contact with the lower ends of the bodies where the same have been cut away and project below the dovetail. Isn't that correct?

A. Yes. But there isn't any prong there for them to work over.

Mr. BLAKESLEE.—We move to strike out the last portion of the answer beginning with "But there isn't any—" as not responsive to the question.

Mr. LYON.—I do not understand counsel for complainant or the complainant to contend that there is

(Deposition of Thomas J. Griffin.)

any prong construction in their Complainant's Exhibit Improved Double Reamer, nor in types D and E. The defendant in this case has stated that it does not charge that either or any of these three reamers infringe any but claims 16 and 17 of the Wilson patent in suit, and those refer solely to the cutters and not the body portion. The defendant insists that complainant is bound by this election and the stipulation which will be found set forth on pages 24 to 26 of the record herein.

XQ. 234. (By Mr. BLAKESLEE.) Can you state when and where you have actually, yourself, used the following types of reamers, to wit, Complainant's Exhibit Improved Double Reamer and Cutters, and Complainant's Exhibits Defendants Reamers "C," "D" and "E"?

A. I used the type D on Niles' lease about four years ago. I think it was; the type C I used on the Isthmus of Tehuantepec, the first one, in Mexico, if I remember, in the [601] latter half of 1906; the improved Double reamer and cutter I used at Maricopa, somewhere about four years ago; and the type E I used also in the Maricopa fields about four years ago. Since that time I have been out on the field around amongst drillers and have rung in these different types of reamers several times and actually drilled with them an hour or two at a time, in and around Los Angeles.

XQ. 235. How lately?

A. About a year and a half ago was the last.

XQ. 236. Can you state at what places?

(Deposition of Thomas J. Griffin.)

A. On the Union Oil Company's lease; on the Central Oil Company's lease at Whittier; and on the Standard lease near La Brea; and on other leases that I cannot call to memory just at the present time.

XQ. 237. Then you have, as a fact, done some drilling since March, 1912?

A. Yes, if you want to call it that. The drill was on the derrick and I would go there and drill. The last drilling that I really did was about six months ago out on the Union lease, with a rotary.

XQ. 238. What do you understand to be meant by the mode of operation and principle of action of an underreamer?

A. Why, to describe the way that the tool is constructed, the way that the bits are collapsed and expanded when in reaming and out of reaming position, and how the tool is assembled and disassembled.

XQ. 239. What is the difference between the mode of operation and principle of action?

A. The mode of operation would be operating the tool, and the principle of action would be, as I would define it, explaining the action of the tool, what it does. [602]

XQ. 240. In other words, principle of action would be the mode of operation?

A. Well, just as you like.

XQ. 241. Sometimes it would not be?

A. Well, it is owing, probably, to who you are talking to. I will explain to you the mode of operation or I will explain the mode of action.

XQ. 242. And either one would go in describing

(Deposition of Thomas J. Griffin.)

the operation of the reamer, would it?

A. To a well-man, yes.

XQ. 243. How did you wish us to understand these terms—as being the same? A. No.

XQ. 244. What difference did you want to make in using those terms for us?

A. I wished you to understand me as saying the mode of operation is to operate the tool in the hole, to drill with it.

XQ. 245. And how about principle of action?

A. The principle of action is an explanation of how the tool acts in expansion and contraction—explaining it.

XQ. 246. In other words, how it operates?

A. Yes.

XQ. 247. What do you mean by an inoperative paper drawing?

A. An inoperative paper drawing is a drawing that is not accurate; that a tool built as shown in the drawings could not be operated.

XQ. 248. Do you mean to say that you could not take Complainant's Exhibit Wilson Patent, build a reamer in accordance with it, and make it operate?

A. Yes. If I had lived right to the lines I could not. [603]

XQ. 249. It is perfectly clear how it is intended to operate, is it not?

A. It is clear how it is intended to operate, but the way the cutters are shown in the drawings of the Wilson patent they are inoperative. They won't collapse. And they would be dragging over a sharp

(Deposition of Thomas J. Griffin.)

edge when they went over the lower portion of the prongs in an expanding position.

XQ. 250. Now, are you sure they wouldn't work with that sharp edge?

A. Why, no. They would work, but they wouldn't work satisfactorily.

XQ. 251. And if you found they didn't work satisfactorily you would not have any trouble rounding that edge off a bit if you thought it was necessary, would you? A. Why, no, certainly not.

XQ. 252. You do not find anything else that would trouble you as to the operation of this Wilson reamer as shown in the patent, do you?

A. Why, with the modifications. Any man that knew what he was going to do, that knew he was building that and that it had to fit inside of a certain size casing would modify it so that it would fit; but the reamer lugs would not come together sufficiently to allow, as shown in this drawing—they could not come together close enough so that it would enter the casing.

XQ. 253. They are shown inside of the shoe in the casing in the drawing in figure 1, are they not?

A. Oh, yes, a paper drawing can show anything, but will it operate? It also shows in this paper drawing that the upper ends of these cutters are right out against the casing and the sharp points or edges, and we know that no such condition could exist as it would hang in the casing when the tool was being pulled out. And also it would show that it would wedge, that it [604] would fit too tight and that

(Deposition of Thomas J. Griffin.)

the pressure would be on the top part of the shanks of the cutters—exactly where you do not want it. It must not be there; it must be on the backs of the cutters and not at the upper point or shank of the cutters.

XQ. 254. It is quite common to tie cutters before they are entered in the casing, is it not?

A. Very seldom.

XQ. 255. You have done it, have you not?

A. Yes.

XQ. 256. There is nothing to prevent the cutters collapsing to there the shoe in the Wilson patent, is there?

A. Yes, as shown in the patent drawings.

XQ. 257. You do not think they would enter the shoe? A. No, I do not.

XQ. 258. State why again.

A. Because the upper corners of the shanks project out and are not provided with the pull-down shoulders as shown in the cutter, and they would have a wedging effect on the shoe, and I doubt that it could ever be pulled any further than the mouth or the entrance of the shoe. To illustrate, in the back and upper portion of the Wilson cutter, at a point $1\frac{1}{2}$ inches below the upper end, is a shoulder, placed there for the purpose of coming in contact with the lower portion of the shoe to cause it to pull down and collapse over the prongs, and that riding surface extends down for about 4 inches. That is the surface that comes in contact with the casing, comes out, clearing the upper end of the cutter.

(Deposition of Thomas J. Griffin.)

XQ. 259. Referring to Wilson patent, lines 51 to 53, inclusive, page 2, "It is made plain so anyone could properly make the cutters, the Wilson patent that 30 are the usual shoulders for drawing the cutters in when a tool is removed through the pipe or casing." That is so, is it not? [605]

A. Yes, if you will use the numerals 40 there you will have it complete. Casing 40.

XQ. 260. When you say the mode of expansion in the Double cutter, after passing through the casing for use, is identical with the Wilson, what do you mean by "identical"?

A. It expands at the same point and in the same proportion as the Wilson.

XQ. 261. You mean the cutters expand by bearings at the lower end of the body, don't you?

A. Yes.

XQ. 262. In the Improved Double reamer and in types D, E and F, the expanding shoulders on the cutters are on the body of the cutter beneath the shank, which body has the cutting edge, are they not?

A. Yes; in all types, F included.

XQ. 263. If a shorter cutter, expanding fulcrum from a given point, expanding over a given thickness of metal at its lower portion, will necessarily cause to be reamed or give a larger expansion of the cutters, reaming a larger hole, what would occur with a longer cutter expanding fulcrum from a given point?

A. It would necessarily decrease the size.

XQ. 264. What do you mean by saying that you

(Deposition of Thomas J. Griffin.)

find that the relative thickness of the lower inner portions of the reamer body, in examining and comparing the different makes of Double reamers, have not been increased or decreased?

A. I mean that portion that is commonly called the spreading bearings.

XQ. 265. What do you mean by "thickness" in this connection?

A. The distance from one surface to the other.

XQ. 266. Which way through the reamer?
[606]

A. To illustrate, in the 4-inch type C Double reamer the thickness is $1\frac{3}{8}$ inches; the thickness in the type F reamer is $1\frac{1}{2}$ inch; the thickness in the type D is $1\frac{1}{2}$ inch. Type F and type D being $4\frac{1}{2}$ inch reamers, and type C being 4-inch, is the cause of the difference in the thickness of the metal.

XQ. 267. You mean the thickness of the metal between the cutters when they are expanded; is that it? A. Yes.

XQ. 268. In the use of the Wilson reamer can the spring-actuated tee-bar ever strike the pin or bolt at the bottom of the reamer excepting in the case of a break? A. Yes.

XQ. 269. When?

A. It can be pulled down that low in the block-and-screw type, but not in the key type.

XQ. 270. In the old-style Double cutter with the double dovetail, both dovetails are on the shank of the cutter, are they not?

(Deposition of Thomas J. Griffin.)

A. Yes. Also in all other types that use the double dovetail.

XQ. 271. Will you please tell me whether the full length of the expansion and contraction movement in the old-style Double cutters extends the entire distance across the inner face of the cutter.

A. The reason that it is made wider than the upper portion of the shank of the cutter is that it begins at the spreading V-shaped notch, down its entire length, which is approximately 2 inches long by 3 inches wide, or being within $\frac{1}{8}$ inch as wide as the cutting portion of the cutter.

XQ. 272. Is that all the answer you wish to make to the question?

A. Read the question over and I will see if any further answer can be made. [607]

(Last question read.)

A. Yes, it extends clear across it.

XQ. 273. Now, would you say that a motor vehicle without a motor would be a motor vehicle?

A. It would. It would not be complete.

XQ. 274. Then equally you would think a hollow-slotted extension without a slot would be a hollow-slotted extension? A. Why, no.

XQ. 275. You say in the Wilson reamer the inner portion of the cutter at no time touches upon any stationary metal. What do you mean by the term "stationary"?

A. I mean just what I said; that the inner portion of the shank of the cutter never touches upon any stationary metal—it never bears against any stationary metal.

(Deposition of Thomas J. Griffin.)

XQ. 276. Does it bear against movable metal?

A. No—yes, the upper end.

XQ. 277. When is it movable metal?

A. When the cutter is being expanded or contracted, and that is the tee-bar.

XQ. 278. And that, you say, is a clear distinction between the Wilson reamer and the Double reamer?

A. It certainly is, as at no time does the end portion of the dovetails of the Wilson reamer come in contact with any metal at all, but, on the contrary, in the Double the inner portions of the cutter is in contact with stationary metal at all times.

XQ. 279. But this portion of the metal in type F Double reamer has been cut away so that it does not extend across between the prongs, has it not?

A. Not that part that is in contact with the inner portion of the cutter at its spreading bearing has not been cut [608] away in the type C or the improved type D, type E nor F. The width of the slot has been increased in the size or width of the type F reamer and the bearing surface is not as great on the back of the cutter as it is in the other types of the Double reamer, but it is there all the same and continues down to even the last point of the spreading bearing in either type F, type C, D, E or the improved, and it does not terminate in prongs.

XQ. 280. Is that because the lower end of the body has its parts fitted with a bolt or block that it does not terminate in prongs? A. Yes, sir.

XQ. 281. Then the prongs of the Wilson reamer

(Deposition of Thomas J. Griffin.)

when they are connected with the bolt are not prongs?

A. Strictly speaking, no. But they have an outside expanding bearing that extends over two separate and distinct divided bearing surfaces that the Double never has at any point,—any such prongs that the tool spreads over before it comes in contact with the inner bearing surface.

XQ. 282. But part of the time the cutters contact with these spaced portions of metal at the lower end of the type F reamer? A. Oh, yes.

XQ. 283. Then you would say, I suppose, that there is a difference between the principle of action, between the Double reamer and the Wilson reamer?

A. No; I would not say there was a difference in the principle of action. They both spread over an end bearing and expand and contract over a bearing at the same place, but the difference in mode of expansion is very pronounced.

XQ. 284. There is a very broad and distinctive difference between them, you think?

A. I do, as the forks could not be used on types C, D, E, F, or any other type that Double ever made, to expand over the [609] inner expanding surfaces of the cutters, and then the bearing be transferred to a solid portion of the reamer.

XQ. 285. As a matter of fact, in type F, however, there is not a fixed expanding portion between the lower ends of the prongs, but rather, a removable bushing on a bolt like the Wilson bolt F connecting the two prongs, with a clear space between these

(Deposition of Thomas J. Griffin.)

prongs and between the shanks of the cutters. Is that not correct?

A. There is no bushing in the bottom of the type F reamer.

XQ. 286. You would not call the block a bushing?

A. No, sir. A bushing is a reduction in size that will have a hole in it. A block is something solid. You would not use the word "bushing" if you wanted to screw a plug into the end of a piece of pipe. If you wanted to reduce it in size you would use a bushing. If you wanted to close it up you would use a plug.

XQ. 287. You use a bushing to increase the size?

A. No, you would not. You would bore it out to increase it. You bush it to decrease it.

XQ. 288. Suppose you wanted to increase the size of the pin. Isn't it proper to say that you put a bushing on it to increase it?

A. Why, no, I don't think so. I would bush the hole that the pin went through to make it conform to the size of the pin. I certainly would not bush the pin.

XQ. 289. Then you bush the space between the prongs in type F over the pin to fill up that space, don't you?

A. No; you put a block in it, or plug, and close it up. The bushing would still have a hole in it.

XQ. 290. Hasn't that plug a hole in it for the pin?

A. It has in the opposite way, but not in the plug-

(Deposition of Thomas J. Griffin.)

ging-up way, if you are trying to plug the hole.

XQ. 291. And you plug the hole in this part by the pin through it? [610]

A. After the block is inserted you plug the hole up with the pin.

XQ. 292. In the O'Donnell & Willard patent you find a principle of action that corresponds to the action of the Double patent in so far as the cutters are expanded and contracted by tilting over an

and/interposed wedge, the upward ends of

I. B. contracted

the cutters being/~~connected~~ inwardly as the cutters rise?

A. No, sir.

XQ. 293. What is the difference?

A. In the O'Donnell & Willard the cutters do not expand and contract over any such portion as it does in the Double.

XQ. 294. It does not tilt over that portion?

A. It tilts over, but it does not slide over and it does not abruptly go over. It gradually slips up and tilts, and when it comes down there it teeters, and in the Double it does not. Neither does it in the Wilson.

XQ. 295. Then you were not correct when you said that you found in the O'Donnell & Willard patent a material corresponding action of the Wilson, I suppose?

A. I am correct when I stated I found a material corresponding action, because the Wilson slides up-

(Deposition of Thomas J. Griffin.)

wardly over an upwardly and outwardly-inclined bearing corresponding to the central portion of the removable wedge-shaped center of the O'Donnell & Willard patent.

XQ. 296. Then, I take it, the action of the Wilson reamer, as you look at it, corresponds more with the action of the O'Donnell & Willard patent than with the action of the Double patent?

A. I should say so. Its primary expanding action over the points before the gradual, and, you might term—if you wish to make it so—tilting action there, and then it expands over upwardly and outwardly inclined or wedge-shaped portion the same as the O'Donnell & Willard, except that in the Wilson it has two [611] separate and distinct bearings, and in the O'Donnell it only has one, which extends clear across the central portion on the backs of the cutters.

XQ. 297. You find in the O'Donnell & Willard patent a hollow-slotted part at the lower end of the body, don't you, around which or over which the cutters expand and collapse?

A. I find a removable wedge-shaped hollow-slotted portion.

XQ. 298. And the cutters expand and collapse over this, don't they?

A. No. They slide upwardly and outwardly, corresponding to the upward and outward movement of the Wilson, and when they have been pulled down to the extreme end or extreme limit of movement then they tilt over this lower portion of the central part of the reamer and slide out on a key at the top

(Deposition of Thomas J. Griffin.)

provided by this bowl-shaped device in the O'Donnell & Willard.

XQ. 299. And that sliding action corresponds to the sliding action of the Double cutters on the key, doesn't it?

A. Very little. There is very little sliding action, if any at all. There would be very little on the Double.

XQ. 300. But there is a sliding action on the cutters? A. Yes; just enough for a clearance.

XQ. 301. And in the Wilson there is more of a teetering action on the key?

A. There is a slight sliding action on the key, but very slight. It is more of a teetering action, but there is a slight sliding action which would have to be got for the reason that the tool is not made perfect—that is, to fit perfect. And there is a little play there and it has to slide, owing to that fact.

XQ. 302. You testified as a witness for the complainant in the Union Tool Company and others against Wilson & Willard Manufacturing Company in a suit pending in this same court, No. 1540, didn't you—a suit concerning underreamers? [612]

A. Yes.

XQ. 303. I call your attention to your answer to question 1138 in the record of your testimony in that case, in which you discuss the O'Donnell & Willard construction and in which you answer as follows: "It is no comparison in expansion or contraction to the Double nor to the Wilson in either of these exhibits." How do you reconcile that statement

(Deposition of Thomas J. Griffin.)

with your last testimony?

Mr. LYON.—Wait a moment. Show the whole of the record there. It is not to be contended by counsel for the present complainant that the extract referred to is the whole of the witness' testimony in regard to such O'Donnell & Willard or Wilson or Double device in the said case.

Mr. BLAKESLEE.—The witness has the testimony before him, being all of his testimony given in rebuttal in that case.

A. In Q. 1157 you have referred to Defendant's Exhibit O'Donnell & Willard Underreamer, and to Defendant's Exhibit O'Donnell & Willard United States Letters Patent No. 762,435. At no time in the expansion or collapsion of the bits of this underreamer exhibit, or the embodiment shown in the drawing or described in the specification of said patent to any portion or portions of the bits contact with the end of what is termed the wedge-shaped portion 3 in the patent. "A. They at no time come in contact with this portion of the spreading bearing or I should have said the removable wedge-shaped partition 3." I now again say that the O'Donnell & Willard cutters do not come in contact with the ends of the spreading bearing, as it has no spreading bearing, in comparison with the Double reamer. Neither has it in comparison with the bottom or prong end of the Wilson patent, and that was my answer to the question. Question No. 1138 in this respect: "Does the O'Donnell & Willard construction and interrelation of the bits to the body por-

(Deposition of Thomas J. Griffin.)

tion, and the principle of expansion, compare with the Double and with the Wilson underreamer?

[613] A. It has no comparison in expansion or contraction to the Double nor to the Wilson in either of the exhibits," for the reason that the O'Donnell & Willard cutter never comes in contact with the upwardly and outwardly inclined lower spreading bearing. It does not collapse or expand over any such bearing, but it teeters over a removable wedge-shaped portion in the center of the reamer and does not slide up over it. But after it has teetered in its expansion it slides gradually over the upwardly and outwardly inclined portion of the reamer body or wedge, I should have said, corresponding to the prongs of the Wilson underreamer. That is what I meant by my answer awhile ago.

XQ. 304. And you still insist, do you, that the Wilson reamer more closely resembles the O'Donnell & Willard patent reamer than it does the Double patent reamer?

Mr. LYON.—The question is objected to as assuming that the witness has ever so insisted, counsel's interpretation being an entirely erroneous interpretation. The witness simply said that in so far as the upper bearing surface of the Wilson, those portions which are upwardly and outwardly inclined and which take the thrust, there was correspondence between the Wilson and the O'Donnell & Willard.

Mr. BLAKESLEE.—We call the attention of the reporter to rule 51 and insist that it is not proper

(Deposition of Thomas J. Griffin.)

for counsel to argue this matter on the record. The record speaks for itself.

A. I have stated many times previously in my testimony that the upwardly and outwardly inclined bearing surfaces of the Wilson prongs or forks correspond in action to the central portion of the O'Donnell & Willard underreamer. But I have never said in any of my testimony that the O'Donnell & Willard underreamer lug collapsed and expanded over the bottom part of the removable wedge-shaped partition. [614]

Mr. BLAKESLEE.—We move to strike the answer out as not responsive to the question, and ask that the question be reread, and answered by the witness.

Mr. LYON.—The question is objected to as a misstatement of the testimony of the witness.

Mr. BLAKESLEE.—The record speaks for itself. (The notary reads the question.)

A. I do.

XQ. 305. Referring to the Swan patent, you do not find any prongs in that over which the cutters expand and collapse, do you?

A. No. Neither in the O'Donnell.

XQ. 306. Thank you. There is a hollow-slotted extension in the Swan patent, is there not?

A. Yes. That is to say, a tapered hollow-slotted extension. And so there is with the O'Donnell & Willard.

XQ. 307. To what part of the body of the Wilson reamer are the dovetails parallel?

(Deposition of Thomas J. Griffin.)

A. To the slot, the same as it is in the Swan.

XQ. 308. And where is the slot?

A. In the lower portion of the body of the reamer extending down almost to the lower end.

XQ. 309. And is there not a hollow-slotted extension in the O'Donnell & Willard patent?

A. Yes; a removable hollow-slotted extension.

XQ. 310. Which testimony do you wish to stand by now, that just given or your answer to question 1040 in suit No. 1540 just referred to, in which you stated, "there is no hollow-slotted extension in the O'Donnell & Willard defendant's exhibit, nor neither is there in the O'Donnell patent a hollow-slotted extension?"

A. I wish both of my testimonies to stand, as both are facts. The question says, "removable hollow-slotted extension," and when counsel for defendant in said suit asked the question [615] he did not qualify it. Besides, I wish to state further that there is no hollow-slotted extension in the Willard and O'Donnell underreamer or the patent, but there is a slot.

XQ. 311. I call your attention to your answer to question 482 in the record of the same case in which you stated, referring to the Swan patent reamer, "there being no slotted extension which these bits work through," and ask you if you wish that to stand now as your understanding of that patent?

A. I desire to see the record before I answer the question. (Examines testimony.) I wish the testi-

(Deposition of Thomas J. Griffin.)

mony as given in answer to question 482, namely, beginning on line 20, page 1328, "there being no slotted extension which these bits work through" to remain, and also my testimony as just given in this case, as one has no relation to the other. The bits do not pass into the slot the same as the Double or the Wilson, and my testimony is absolutely correct in both instances.

XQ. 312. The key passes through the slot in the O'Donnell & Willard patent reamer, doesn't it?

A. I don't think there is a key in the O'Donnell & Willard patent reamer. I think there is a 2-part tee disclosed.

XQ. 313. Well, the part 8 is a cross-head which acts just the same as a key in the Double patent.

Mr. LYON.—Are you talking about the key of the Wilson or the key of the Double?

Mr. BLAKESLEE.—He has got it.

A. No. Part 8 acts just the same as a tee in the Wilson and is very similar in design.

XQ. 314. However, it operates in a slot in the hollow-slotted extension 3, does it not?

A. There is no hollow-slotted extension 3.

XQ. 315. Well, which ever way you wish to put it. Call it the part 3. A. I call it a slot. [616]

XQ. 316. It is a slot? A. Yes.

XQ. 317. And don't you consider the tee of the Wilson patent and reamer which suspends the cutters practically a key?

A. No; a key is a removable portion.

XQ. 318. Never solidly formed on anything?

(Deposition of Thomas J. Griffin.)

A. I have seen keys that would be feathered in a shaft and caulked in. But this is no key. A key in the sense spoken of would not work satisfactorily in this construction. It would work from side to side, and the tee-rod is confined in a bearing, you may call it, at 6 or *a*.

XQ. 319. Then it is a tee-rod in the Wilson reamer, is it? A. Yes.

XQ. 320. I call your attention to your answer to question 1144 given in your deposition in said other suit No. 1540, which is as follows: "My meaning in answer to that question was that the key was a differently constructed key; but mechanically speaking there is no tee-rod or tee in the Wilson reamer, but a rod with a solid key formed over it," and I will ask you how you reconcile that testimony with the testimony you have just given?

A. "Q. 1144. In your answer to question 550 which was 'Is there any key in Complainant's Exhibit Wilson Underreamer or Complainant's Exhibit Wilson Underreamer No. 2 which connects the cutters with the spring-actuated rod?' A. In Complainant's Exhibit Wilson Underreamer there is not; in Complainant's Exhibit Wilson Reamer No. 2 there is." I now state the same thing. "Your answer 'In Complainant's Exhibit Wilson Underreamer there is not; in Complainant's Exhibit Wilson Underreamer No. 2 there is.' Please explain this more fully." My meaning in answer to that question was that the key was a differently constructed key. That is in reamer No. 2. "But mechanically speaking

(Deposition of Thomas J. Griffin.)

there is no [617] tee-rod or tee in the Wilson reamer, but a rod with a solid key formed thereon." I have never read over this testimony as I recall, and I would say that solid key formed thereon was a solid head formed thereon, and it is an error in the transcript of the testimony.

XQ. 321. What do you state now as to whether or not there is a tee-rod or tee in the Wilson reamer?

A. A tee-rod.

XQ. 322. If there is no metal in the body of the Wilson reamer constituting an inner bearing for the portion of the inner surface of the cutter, being in contact with it at all times and especially at the upper and lower ends, and by placing the Wilson cutter in the body the upper end will all at once drop—does not the cutter drop between the forks and not through the hollow-slotted extension?

A. It drops through the fork which is a part at that point of the slotted extension connecting the hollow and the slot.

XQ. 323. You say that there have not been any changes in the principle of action or mode of expansion or contraction of the cutters of Complainant's Exhibit Type "F" Reamer from that of the old style Double Reamer? There have been changes made in the construction of the reamer type F, have there not?

A. I wish so to testify, that there has been no change in the construction of the reamer that involves either the expansion or contraction of the old style Double reamer down to type F.

(Deposition of Thomas J. Griffin.)

XQ. 324. But there have been changes in construction of the cutters and bodies made, as you have testified? A. In F, yes.

XQ. 325. And not the others?

A. No, excepting as the elimination of the dovetail or lengthening of the dovetail and lengthening of the bit and [618] shortening of the bits.

XQ. 326. Extending the bearing surfaces on the cutters further beyond the shanks?

A. That is only too true, but there is no forks at the ends of this body.

XQ. 327. Likewise extending the surfaces on the lower ends of the bodies upon which surface the extensions on the cutters engage to take the inthrust, and any part of the expanding and contracting action?

A. In the Double improved and type D and E and type F, as I have before testified, clearly upon the point, for convenience that portion of the lower part of the mandrel had been planed off for convenience in types D and F in manufacture.

XQ. 328. It takes more work to make types D, E and F and improved Double reamer and cutters?

A. It takes more work to make the Double improved underreamers, but it takes less work on this particular feature to manufacture type D and type F.

XQ. 329. Doesn't it take more machinery operations to make type D and type F?

A. No, for the reason that the cutting of the lower or added dovetail is much shorter.

(Deposition of Thomas J. Griffin.)

XQ. 330. Doesn't it take a greater number of machining operations to make type D and type F than it does to make the old style Double reamer?

A. It only requires changing the angle of the tool on the planer.

XQ. 331. It requires two more changes, does it not?

A. If you turn it over, yes. But it only requires one to the side.

XQ. 332. That is, two more operations altogether. A. Yes. [619]

XQ. 333. And is there a saving of time?

A. Yes; it is easy to plane that straight across by changing the angle of the cutter on the planer. It is easier to change that angle and go ahead and plane that off square than it is to take a chisel and an air hammer and cut out the added dovetails.

XQ. 334. But the added dovetails are in there also, are they not?

A. Yes, but they are not as long.

XQ. 335. Which is most advantageous to make them, shorter or longer?

A. That is a question of choice. I wouldn't turn around for the difference in the selection of a reamer, whether it were long or short. I believe that the shorter they are the better they are. If they break off they won't break so far back.

XQ. 336. What are they used for in that connection?

A. Giving additional strength to the upper dove-

(Deposition of Thomas J. Griffin.)

tails, preventing the cutters from falling out and re-
I. B. outward

sisting the/~~downward~~ strain on the lugs that comes in reaming.

XQ. 337. And in the old style Double reamer the body was not planed across at all at the bottom below the dovetails, was it?

A. Why, yes. If counsel will just glance at the reamer there lying on the floor, I think he will find that it is planed across.

XQ. 338. On the parallel bearing face of the hollow-slotted extension?

A. No; it is not square across. It is at right angles with the body of the reamer, as in type F.

XQ. 339. And that was an added planing operation in type F, type D and type E?

A. As I explained in my answer given a few minutes ago, [620] it was necessary to change the angle of the tool when the reamer body was being planed up on the planer.

(By consent of counsel for both parties an adjournment is now taken until to-morrow, Friday, July 30, 1915, at ten o'clock A. M.)

Office of Frederick S. Lyon, 504 Merchants Trust
Bldg.

Los Angeles, Cal., Friday, July 30, 1915,
10 o'clock A. M.

This being the time and place to which the further taking of proof on behalf of defendant in this cause was continued, proceedings are now resumed.

(Deposition of Thomas J. Griffin.)

Present: FREDERICK S. LYON, Esq., Solicitor
for Defendant.

RAYMOND IVES BLAKESLEE, Esq.,
Solicitor for Complainant.

THOMAS J. GRIFFIN, recalled.

Cross-examination (Resumed).

(By Mr. BLAKESLEE.)

XQ. 340. You find in the cutters of type F reamer bearing shoulders extending sidewise or laterally on the large cutting ends of the cutters which are wider than the bearing surfaces of any of the three old style Double cutters, Defendant's Exhibits 1, 2 and 3, do you not? A. Yes; a very small corner.

XQ. 341. Those parts that you have called corners are connected by parts that extend clear across the backs of those corners, are they not?

A. Yes.

XQ. 342. Just the same as the remaining portion of the bearing shoulders extending clear across?

A. Yes. They are there. [621]

There is no comparison whatever in this type F lug with that of the Wilson lug, owing to the fact that it is a straight plane, and those on the Wilson are angular bearing surfaces.

XQ. 343. The Wilson reamer was not involved in that question at all, and I ask that that answer be stricken out as not responsive to the question, and I ask that the question be reread and answered.

(Question is read.)

A. My answer is just the same as it was previously

(Deposition of Thomas J. Griffin.)

—yes, with the above qualifications.

XQ. 344. What qualification do you wish to make to the answer comparing these cutters 1, 2 and 3, and F?

A. There is a difference in the length of the bearing, or width, including the length in 1, 2 and 3, and type F. I wish to change all of this part of my answer relating to the difference in width of the cutters, and comparing 1, 2 and 3 and type F as erroneous, as I did not clearly understand the question when I answered yes. I now wish to change that answer and say no; that the bearing surfaces of reamer lug 3 is identical in width with reamer lug type F. In type F there has been a portion of this bearing face eliminated. That is to say, 1-inch on each side, beginning at the upper portion of the inner spreading-bearing surface, by $\frac{1}{4}$ inch.

XQ. 345. You do not propose to give us to understand that Double reamer cutter No. 3 is the same size reamer as type F, do you?

A. I have not in front of me the drawings by which either of the $4\frac{1}{2}$ inch reamers were constructed, and I cannot answer you, only to say that apparently they are the same size reamer in both instances, namely, $4\frac{1}{2}$.

XQ. 346. Which is the larger or wider cutter, Double cutter No. 3 or the cutter of Complainant's Exhibit Old Style Double Reamer Cutter No. 1?
[622]

A. I am unable to say which is the larger size cutter. That is to say, which cutter will ream the largest

(Deposition of Thomas J. Griffin.)

hole. They are apparently both for $4\frac{1}{2}$ reamer bodies. Complainant's Exhibit Reamer Cutter No. 1 is an old, worn-out hammered-up piece of junk metal, and there is no way of measuring it with any degree of accuracy.

XQ. 347. Will you please explain to me how it would be possible to get the spreading shoulder of Defendant's Exhibit Double Cutter No. 3 into the hollow of type F reamer?

A. The reamer cutter No. 3 will not go into the hollow of reamer type F in its present condition, it being too long and too wide.

XQ. 348. In other words, it was constructed for a reamer not less than a $5\frac{5}{8}$ size, wasn't it?

A. No, sir.

XQ. 349. What is the smallest size Double reamer it will go into with its present width?

A. I have no drawings or instruments with me by which to say whether it would go into a 4-inch or a $4\frac{1}{4}$, but certainly it could not be for a larger size reamer than a $4\frac{1}{2}$.

XQ. 350. It could not be done in a 4-inch, could it? A. I don't know.

XQ. 351. It could not be taken in the type F reamer, could it?

A. No; not in its present condition.

XQ. 352. Is not the spreading surface upon the back of the shank of this No. 3 Double cutter so wide that there is no doubt but what it was intended for a larger diameter reamer than type F?

A. Unless I had the drawings in front of me—the

(Deposition of Thomas J. Griffin.)

original drawings that were used in the manufacture of this reamer—I would not be able to say.
[623]

XQ. 353. You can say, can you not, whether there is not fully half an inch width on the spreading surface on the back of the shank of this Double No. 3 cutter which could not be received by the co-operating, expanding and intrust portion of the type F reamer?

A. As I have previously testified, a few moments ago, this reamer lug No. 3 would have to be changed in width and in length before it would go into the type F reamer.

XQ. 354. Don't you think it is intended for a larger style Double reamer than Double improved and old style Double cutter No. 1, Defendant's Exhibits?

A. I do not, and I would not say yes or no unless I had the drawings in front of me so that I could measure up.

XQ. 355. Then you don't know whether any of these old style Double cutters Nos. 1, 2 and 3, were intended for the same size reamer as type F reamer, do you?

A. No more than I know that the Complainant's Exhibit Wilson reamer cutter belongs to this body, as it is marked $4\frac{1}{2}$ inches, and the body is for 4-inch type.

XQ. 356. You do not know, nevertheless, what size body any of these three Double old style cutters are intended for, do you?

(Deposition of Thomas J. Griffin.)

A. I am quite positive that they are for $4\frac{1}{2}$ inch reamers.

XQ. 357. How do you make that out without the drawings before you?

A. I am just as positive as I am of the other. I cannot say that they are exact, but apparently they are for $4\frac{1}{2}$ inch.

XQ. 358. In spite of the differences in the width of the spreading bearings and inner faces?

A. Yes; in spite of that difference.

XQ. 359. What leads you to believe that they are for $4\frac{1}{2}$ inch? [624]

A. Well, cutter No. 1 will not fit in the type C Double body, which is 4-inch; neither will reamer lug No. 2 fit in the type D reamer, and that is a $4\frac{1}{2}$ inch reamer, because I have it in front of me and have taken the measure.

XQ. 360. Does what you have stated in your last answer prove anything to you as to the sizes of the reamer these three Double cutters are intended for?

A. Yes.

XQ. 361. What would it indicate?

A. It would indicate that reamer lug No. 1 is for a $4\frac{1}{2}$ inch reamer.

XQ. 362. Because it won't fit in a $4\frac{1}{2}$ inch reamer body?

A. That there is a great difference in the width of the cutter, the width of the bearing surfaces, the length of the bearing surfaces and the width of the shanks and lengths of the shanks in the different style $4\frac{1}{2}$ inch reamer bodies.

(Deposition of Thomas J. Griffin.)

XQ. 363. Now, you take it that Double old-style Cutter No. 1, Defendant's Exhibit, is for substantially the same size reamer as type F reamer?

A. Yes; and it will fit in the reamer body of the type F.

XQ. 364. And also cutter No. 2?

A. Cutter No. 2 will not fit.

XQ. 365. But you find bearing shoulders on the type F cutter down on the solid cutting ends of the cutter with metal extending clear across the back of the solid body between such laterally extended shoulders, making a total bearing surface broader than that in either Double old-style cutters Nos. 1 or 2, Defendant's Exhibits, don't you?

A. Yes; by $\frac{3}{8}$ ths of an inch on its lower portion only.

XQ. 366. Don't you think that putting these bearing surfaces down on the solid cutting bodies of the cutters of type F and also doing the same in types D and E gives more effective [625] solid substantial bracing resistance against intrust of the cutters in these reamers?

A. I certainly do not agree with you at all.

XQ. 367. Why don't you agree with me? Because you have a reason, or because you don't wish to? A. Because I have a reason.

XQ. 368. State it.

A. And I do not care to state anything only what I believe to be absolute facts, and I have no reason to conceal anything that is facts. From my long experience and seeing others drill with reamers, and

(Deposition of Thomas J. Griffin.)

having discussed drilling with wide cutters and narrow cutters of all different makes and types of reamers, I cannot agree with you that a very wide cutter is an advantage in reaming any hole. In fact, a cutter one-third less the width of either the Wilson or any type of Double reamers would be more effective in reaming a hole and giving less pinching than any of the reamers that are now manufactured. As I have previously testified in this case, and also in my previous testimony in the Union Tool Company et al., vs. Wilson & Willard Manufacturing Company, the same, and especially in this case, that when a reamer is in expanded position that it does not form a circle, and that all points of that cutter are not in contact with the substance, and the wider the cutter the less the circle it forms, for the reason that it has to go inside of the casing, and if it did form a circle, for instance, of 8-inches in diameter, the cutter would bind and pinch, and only the central portion of the cutter is in contact with the reamed substance. Therefore, it causes the reamer lug to pinch and to bind more than if it was a small width cutter. The larger or wider the cutter is and the more arc of a circle it fills, the harder the blow, and, if it is, the blow has to be struck to break off the particles of shell or rock; and the smaller it is, to have the desired strength, the more desirable. With the old Austrian reamer, where we had the two little prongs [626] sticking out at the side, to ream was very unsatisfactory as oftentimes in those days, myself included, drillers would make key-seated holes into the rock, for the

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reason that they were not turned properly and they would let tools down too low and not bringing the tool up sufficiently high to allow it to swing clear, so that at its next stroke it would strike in a different position. Therefore I cannot agree with you that that is the case.

Mr. BLAKESLEE.—We move to strike the answer out as not responsive to the question, and ask that the question be re-read to the witness.

(Question is read.)

A. I have stated it. I certainly do not agree with you.

XQ. 369. Is there any reason you can assign further than given in your last answer?

A. No.

XQ. 370. You say that the arc of the circle of the reamer cutter in your answer to question 38 is not a true circle. Please tell me in what respect the arc of the reamer cutter is not a true circle?

A. There is not a reamer that is being exhibited here or any of these exhibits, that is in a condition to measure at all. In the Wilson reamer body the upwardly and inwardly inclined shoulders are badly worn, so that they cannot be measured. In type E and D Double reamer, and the lugs therein have never been dressed and could not be run in the hole, and when they are dressed they change their shape materially and the corners become rounded off. Therefore, the lug, when it strikes, only strikes in the central portion, and does not form an arc, owing to the

(Deposition of Thomas J. Griffin.)

fact that it sets at an angle. Therefore it would not form an arc.

XQ. 371. Does the cutting edge of the Wilson reamer [627] constitute an arc in its form?

A. When it first comes from the lathe and has never been dressed out, yes. This is especially not so when the reamer lugs are not expanded to their full size, for the reason that a segment that had been cut out for a 6-inch circle would not fit in an 8-inch circle. Neither would it in a 4-inch.

XQ. 372. Then I suppose you mean that the cutting edge of the cutter may not describe a true arc where it strikes the walls of the hole. Is that it?

A. That is it, exactly.

XQ. 373. And that is true of any reamer, I suppose?

A. Yes, sir. I do not qualify as to any special type of reamer.

XQ. 374. And it depends on how the reamers are worn and rubbed off, and so forth?

A. Yes, sir; that is it.

XQ. 375. Aside from the discrepancy in the width of the shank, should not a cutter of type F reamer expand and collapse in connection with the prongs of Complainant's Exhibit Wilson Underreamer with broadened bearing surfaces on the inner face of the body of the cutter in contact with the surfaces on the prongs?

A. Not necessarily type F, but any type of the Double reamer cutter will expand and contract if it is a proper width to enter the slot, and will expand

(Deposition of Thomas J. Griffin.)

reason that they were not turned properly and they would let tools down too low and not bringing the tool up sufficiently high to allow it to swing clear, so that at its next stroke it would strike in a different position. Therefore I cannot agree with you that that is the case.

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(Deposition of Thomas J. Griffin.)

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A. Yes, sir. I do not qualify as to any special type of reamer.

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A. Yes, sir; that is it.

XQ. 375. Aside from the discrepancy in the width of the shank, should not a cutter of type F reamer expand and collapse in connection with the prongs of Complainant's Exhibit Wilson Underreamer with broadened bearing surfaces on the inner face of the body of the cutter in contact with the surfaces on the prongs?

A. Not necessarily type F, but any type of the Double reamer cutter will expand and contract if it is a proper width to enter the slot, and will expand

(Deposition of Thomas J. Griffin.)

and contract over the Wilson reamer body or prongs. Its matters not what type of Double cutter.

XQ. 376. And that is true of the type F cutter in the type F reamer with the bolt and pin removed, it is not?

Mr. LYON.—The question is objected to as indefinite and uncertain in the expression “and that is true.”

XQ. 377. (By Mr. BLAKESLEE.) That is, it will expand and contract over the prongs of the lower end of type F reamer? [628]

A. Certainly. I so testified several times in my previous answers, that with the bolt and pin removed in type F, that the cutter would expand and contract; but that it was a decidedly unsafe tool, and I would not run it in a hole.

XQ. 378. If the lug or shank of Wilson cutter is placed in the body, the top portion of the cutter will drop through the space between the prongs instead of through any hollow-slotted extension, will it not?

A. Yes; it will drop through this portion. That is a hollow and a slot.

XQ. 379. I suppose by “portion” you mean this open space, don’t you? A. Yes.

XQ. 380. What is the inner diameter of a 4½ inch 15-pound Youngstown casing.

A. I cannot say off hand.

XQ. 381. Don’t you think the cutters of the Wilson reamer in evidence would be capable of contracting within that casing?

A. That is a question that I would have to take and

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measure up before answering the question. I would have to take a piece of Youngstown casing and measure it up with the Wilson 4-inch reamer. I don't think there is any question but what this 4-inch reamer would enter into a 4½ inch Youngstown casing. I don't think there is any question about it.

XQ. 382. And the cutters as well?

A. Yes. That is, 4½ inch casing; not 4-inch casing.

XQ. 383. Are not the bolt and block thereof in type F reamer nearer to the top of the prongs than the bolt in the lower end of the Wilson reamer?

A. Yes; that is true. But that happens for the reason that the shank of the Wilson reamer cutter is longer than the shank of the type F cutter. [629]

XQ. 384. Can you tell me when and where, to your personal knowledge, a Wilson reamer prong ever broke and was lost in a hole?

A. Yes; if I can call the name of the lease I can tell you. It was out in the hills near Taft.

XQ. 385. Did you see it broken?

A. I did not. The tool was in the hole when it was broken.

XQ. 386. Did you see it as soon as it came from the hole after it was broken?

A. No. I saw it in about three or four days after it was broken.

XQ. 387. You were not there when it was broken?

A. No.

XQ. 388. How do you know it was three or four days before? A. Because I was told so.

(Deposition of Thomas J. Griffin.)

Mr. BLAKESLEE.—In view of the answer of the witness, we move to strike from the record the answer of the witness to question 41, on the ground that the same is merely hearsay and not the best evidence.

XQ. 389. Does not the bolt with the block thereon brace the forks or prongs of type F apart in the same manner that it does the prongs of the Wilson & Willard reamer?

A. No.

XQ. 390. Why not?

A. Because ~~there~~ is in the type F, it forms
I. B. a double shoulder.

XQ. 391. And that prevents it from acting as a brace too?

A. No, that is not your question. If I understand your question, you asked me if it did not brace it in a similar manner or the same manner.

XQ. 392. Doesn't it brace the prongs apart, then, if you wish it that way? [630]

A. It braces the prongs apart in the type F reamer, but the bolt in the Wilson reamer does not brace it apart.

XQ. 393. Does not brace the prongs apart?

A. Most assuredly not.

XQ. 394. What does it do?

A. It holds the prongs together and keeps them from spreading apart.

XQ. 395. Does not the bolt in type F do the same thing?

A. The bolt in type F performs the same function as the bolt in the Wilson type reamer when there is

(Deposition of Thomas J. Griffin.)

nothing but the bolt in; but when the block is in there it performs a different function.

XQ. 396. Now, does it perform a different function or an added function?

A. For the reason that it becomes bound or wedged in when tightened up, binding the central portion, whereas if you would tighten up the Wilson bolt it would have a tendency to pull the prongs or forks together. In type F it could not pull them together.

XQ. 397. When you put the block on the bolt in the type F reamer the bolt still performs the same function it does in the Wilson, and also performs another or added function? A. Yes.

XQ. 398. And if the bolt in the Wilson reamer braces the prongs against separation, as well as being sprung inwardly, isn't that equally true in the type F reamer?

A. Yes. But, however, there is a greater difference in the amount of metal in the type F reamer than there is in the Wilson.

XQ. 399. And this bolt with or without the block on it at the lower end of the body of type F prevents loss of the bits, spring and cutters in case of any breakage, in the same manner that it does in the Wilson. Is that not correct? [631]

A. That is an addition.

XQ. 400. It is true in both cases?

A. Yes, sir.

XQ. 401. And the removable bolt and the block in type F permit the bits and the spring and rod to be removed at the lower end and to be assembled at

(Deposition of Thomas J. Griffin.)

the lower end in the same way with respect to that of the Wilson reamer?

A. Not the result; otherwise, yes.

XQ. 402. So far as their being assembled or removed at the lower end is concerned, it is true in both cases?

A. Yes. You could not remove or assemble the cutters, rod and tee-bolt in either of them without removing the parts.

XQ. 403. You say that if the Wilson reamer is a $4\frac{1}{2}$ inch, there is no casing that would follow the hole. Would not a $4\frac{1}{2}$ inch, 15-pound Youngtown casing follow that reamer?

A. I believe I testified that I had no Youngstown casing here and I cannot recall the size of it.

XQ. 404. You would not say that a Youngstown casing of that size would not follow the hole, would you?

A. I had previously testified that I would have to have a piece of casing or a shoe.

XQ. 405. You cannot say one way or the other without seeing the casing?

A. Either to have that, or giving me the exact diameter of it, and the weight shoe, or the outside diameter of the shoe. I don't care anything about the casing. The shoe is what I have reference to particularly.

XQ. 406. You say there is no casing that will follow the hole of the Wilson reamer as a $4\frac{1}{2}$ inch reamer?

A. Well, Mr. Blakeslee, if you desire to be so pre-

(Deposition of Thomas J. Griffin.)

cise, I said that. But in speaking of a string of pipe in a hole, there is always collars on the pipe, and there is always a shoe [632] on that pipe, and it is necessary to provide a hole sufficiently large for these before the casing will follow it.

XQ. 407. Please understand me to always wish to be precise, and to wish you to be precise. And, therefore, if you meant "shoe" instead of "casing," please tell us now.

A. I meant the string of casing, complete. That consists of a shoe and collars thereon.

XQ. 408. As a matter of fact, you have a strong interest in this litigation in favor of the defendant, haven't you? A. Absolutely none whatever.

XQ. 409. Haven't you a strong interest in this litigation against the complainant, E. C. Wilson?

A. Absolutely none whatever.

XQ. 410. In addition to suit No. 1540 in which you have testified previously on behalf of the complainant, which is the defendant in this case, you also testified against the complainant in this case in Interference No. 37,126, in the United States Patent Office, involving the original patent of Defendant's Exhibit Bole Patent herein, did you not?

A. I believe I did.

XQ. 411. You are a complainant, or one of the complainants in a suit pending in this court entitled "Thomas J. Griffin and Others vs. The Wilson & Willard Manufacturing Company, E. C. Wilson," the present complainant, "and others, No. A-118"?

A. I am.

(Deposition of Thomas J. Griffin.)

XQ. 412. That Wilson & Willard Manufacturing Company is the company of which the present complainant is the president, is it not? A. Yes.

XQ. 413. And you only wish to see exact justice done in this case?

A. That is all, absolutely. I am unbiased and unprejudiced against Mr. Wilson in any matters that he has pending in this [633] case or any other case, and I wish to see Mr. Wilson and Mr. Double, or any other parties involved in this suit or any other suit pending before this Court that he has, or Mr. Wilson has any interest in, to receive justice and absolutely only justice, and I would not under any condition favor Mr. Double with my testimony more than I would Mr. Wilson, and all testimony that I have given in this and the previous cases that I have testified in has been to my own personal knowledge and belief, and I do not care to be understood by you or this Court that I have any preference in the matter, because I have positively none. I do not own any interest in this patent nor in the Bole patent or in the Double patents, and I am not dependent upon Mr. Double, Mr. Bole or Mr. Wilson for my sustenance of life. Therefore, I have no preference.

XQ. 414. The defendant in this suit owes you quite a large sum at the present time?

A. I don't think so.

XQ. 415. Didn't it owe you quite a large sum of money about six weeks ago?

Mr. LYON.—Objected to as not cross-examination, irrelevant and immaterial.

(Deposition of Thomas J. Griffin.)

A. What the Union Tool Company owed me six weeks ago or to-day has nothing to do with this case. My affairs with the Union Tool Company as to my royalties owing me at present or that it has owed me has nothing to do with this matter. They are my own personal private affairs, and I refuse to give any testimony in this case that pertains to my private outside affairs and contracts except to say what I have.

XQ. 416. (By Mr. BLAKESLEE.) Is it not a fact that some six weeks ago the Union Tool Company, the defendant herein, owed you a considerable amount of money as royalties in connection with the patent under which you and Edward Double, president of [634] that company, and others, are suing this complainant in this case, and the Wilson & Willard Manufacturing Company?

A. Not one cent. In answer to that, they did not owe me one cent on that patent or that contract six weeks ago, nor do they at present, nor have they ever owed me one cent on that for any longer time than thirty days.

XQ. 417. Did they not during the month of June, 1915?

Mr. LYON.—Objected to as not cross-examination.

A. They did not, and when I answer that I mean this particular case. That is to say, the rotary.

XQ. 418. (By Mr. BLAKESLEE.) But during that month they owed you royalties in connection with other alleged inventions of yours?

(Deposition of Thomas J. Griffin.)

Mr. LYON.—Objected to as not cross-examination, irrelevant and immaterial. The witness admits frankly that he has received royalties at different times from the Union Tool Company on various patent devices, and that shows as well as the specific amounts of such royalties, whether they are paid or unpaid, would show any interest that he may have.

A. I have testified that they don't owe me any royalties or anything involved in any suits at the present or within the last six months.

XQ. 419. (By Mr. BLAKESLEE.) You have several interests in common with Edward Double, the president of the Union Tool Company, the defendant in this case, have you not? A. Yes.

XQ. 420. And you have had for two or three years? A. Yes.

XQ. 421. That company is paying you royalties on several of your patents, is it not?

A. Yes; and others.

XQ. 422. You have compared the Wilson and Double reamers [635] in a number of respects in your testimony in this case. Now, with your experience of reamers, which of these reamers do you consider to be the better reamer?

A. I will be very frank to say that from a 6-inch reamer down to the smaller sizes, if I was buying a reamer to-day I would buy a Wilson reamer; if I was buying from a 6-inch reamer up, I would buy a Double reamer.

XQ. 423. Which reamer would you buy for all around purposes? A. I have just now testified.

(Deposition of Thomas J. Griffin.)

XQ. 424. Do you not consider the Wilson reamer better than the Double for all around purposes?

A. From a 6-inch down, yes; from a 6-inch up, no. I have stated this to Mr. Wilson and I have so stated to Mr. Double.

XQ. 425. Why do you consider the Wilson reamer a better reamer than the Double from 6-inch size down, including the 6-inch, and the Double reamer better than the Wilson of the sizes larger than those?

A. I did not say the 6-inch. I said from the 6-inch up, and from the 6-inch down.

XQ. 426. Where do you split the line?

A. I have no preference in the 6-inch reamer.

XQ. 427. How is it that the Double and Wilson reamers both balance at the 6-inch level, in your estimation?

A. Well, I like the smaller size Wilson reamer better than I do the smaller size Double.

XQ. 428. Why is it, beginning at the 6-inch size, that you prefer the Double larger sizes and the Wilson smaller sizes?

A. Well, the same reason that I would prefer John Smith for a derrick man instead of Bill Jones. I believe that John Smith does better work and handles the casing in the derrick better than Jones, and therefore I send him up in the derrick. [636]

XQ. 429. John Smith and Bill Jones are not the names by which these reamers are known. Now, irrespective of Jones and Smith, do you like the larger Double reamer better than the Wilson, and

(Deposition of Thomas J. Griffin.)

the smaller Wilson reamer better than the Double?

A. I have just stated that I prefer it, not that it suits any larger hole, but I prefer it as a more durable reamer, in the smaller sizes.

XQ. 430. Is durability the only reason why you like the smaller Wilson better than the smaller Double? A. Yes.

XQ. 431. Do you mean it lasts longer or that its parts are more durable, each of them taken separately?

A. As a whole, I believe that your Wilson reamer, that is, the 4-inch and 4½ inch reamer, is a more durable reamer for the work in this country than the smaller size Doubles.

XQ. 432. Can you assign any other reason why you prefer the Double reamer from the 6-inch size up and the Wilson reamer from the 6-inch size down?

A. I believe that the larger size Double reamer will do better work and will last longer than the larger size Wilson.

XQ. 433. In what respect would it do better work?

A. I think it will ream more holes and better holes.

XQ. 434. What do you mean? That the hole is more hollow or more of a slot or what?

A. We don't drill a hole with slots.

XQ. 435. Is the hole hollow when you drill it?

A. In a well the hole is hollow, when you are using the reamer, or there wouldn't be any hole.

XQ. 436. But there is no slot in the hollow?

A. Not in a well that I know of. I have not found

(Deposition of Thomas J. Griffin.)

one yet. I have never been down to see.

XQ. 437. Have you any other reason to assign why you [637] prefer the larger Double to the Wilson?

A. No; only that it will last longer.

XQ. 438. Why do you prefer the smaller Wilson reamer from 6-inch down to the Double?

A. I have told you in my previous answer that I deem them a better reamer as a whole.

XQ. 439. And why better, aside from mere durability, if you can state any other reason.

A. I don't know how to express it in any other words than I have.

XQ. 440. In other words, you split the column in the center and you like the smaller Wilson and the bigger Double. Is that as far as you can go?

A. I have told you that I believe the larger size Double reamer was a better reamer, and I believe that the smaller size reamers of the Wilson were better than the Double.

XQ. 441. How long have you had that belief?

A. Ever since the first one I ever saw.

XQ. 442. Did you testify that in the other reamer suit No. 1540?

A. I cannot recall what I testified in regard to my preference.

XQ. 443. Now, if you were selecting either one of these reamers, the Double or the Wilson, for all sizes, for all around purposes, which one would you select?

(Deposition of Thomas J. Griffin.)

A. I would not select one of them for all around purposes.

XQ. 444. Is it not a fact that at a certain conference held on the 18th of June, 1915, arranged for by you over the telephone with Mr. W. W. Wilson, brother of the complainant in this case, which conference was held at room 440 Douglas Building, Los Angeles, California, you stated in the presence of the complainant, E. C. Wilson, F. A. Stephenson and said W. W. Wilson, [638] as follows: "I am very frank to say that for all around purposes the Wilson reamer is better than the Double," in answer to a question by Mr. E. C. Wilson as to which of these reamers, namely, the reamer made by the complainant herein and the defendant herein, respectively, you considered the better

A. I don't believe that is the exact conversation. I would have to see it and know that it was taken down verbatim, for the reason that I have told Mr. Wilson and I have told Mr. Double, and I also told Mr. Wilson in his shop, in the presence of W. W. Wilson, that I believed that the Wilson smaller size reamer was the best reamer; and he did not ask me why, but I says, in the larger size I believed I would prefer the Double, and I now so state.

XQ. 445. What was your purpose in seeking that interview and arranging that conference on the day stated?

Mr. LYON.—Objected to as irrelevant, immaterial and not cross-examination, and assuming a fact not testified to by the witness, that he either sought

(Deposition of Thomas J. Griffin.)

that interview or arranged it.

Mr. BLAKESLEE.—This is cross-examination.

A. The reason for my seeking or being at such conference in the Douglas Building, or any other conferences that I had with Mr. E. C. Wilson, Mr. Stephenson or Mr. W. W. Wilson, or Arthur G. Willard, did not pertain to any matters that I have testified about.

Mr. BLAKESLEE.—We ask that the answer be stricken out as not responsive, and ask that the question be reread to and answered by the witness.

Mr. LYON.—The objection is repeated.

(The question is read by the notary.)

A. As I attempted to complete my answer when counsel interrupted by his objection, I now say that I refuse, without being instructed by this Court, which I have all due respect for and for counsel, to answer any questions pertaining to that [639] interview or any other interview between myself, E. C. Wilson, W. W. Wilson and Mr. Stephenson or Mr. Willard, and my same answers hereafter will be understood, and will stand in any further questions along this line, with due respect to the Court, unless so ordered.

XQ. 446. (By Mr. BLAKESLEE.) At that same conference did you not state and did you not make the offer that for a certain sum of money you would sell certain rights which you had or claimed to have, to Mr. E. C. Wilson, the complainant in this case, and certain evidence which you claimed to have to support such alleged rights, and that then if you

(Deposition of Thomas J. Griffin.)

were wanted by the defendant in this case, or Mr. Double, in order that you might testify, you could arrange to be out of the jurisdiction of this Court?

Mr. LYON.—Objected to as not cross-examination, and as irrelevant and immaterial and not the proper method of proof of a conversation. If the conversations were cross-examination, or material or relevant, it is not the proper method of proof.

A. I offered to sell all my rights, title and interest to E. C. Wilson at this conference with the exception of one patent, and so stipulated about that one patent, for a certain sum of money, namely, \$10,000, for which I was to deliver him all my right, title and interest in all patents and all inventions and all evidence that I had to support those inventions, and stated to Mr. E. C. Wilson that in selling out my interest that I was expected to go to Oklahoma or to Canada and start out in the oil business in one of those places, or some other place than here, and that when I did so I would have no further interest in California and would, therefore leave the country.

XQ. 447. (By Mr. BLAKESLEE.) Did you not at that conference state and offer that for this same consideration, and included in your general offer, you could and would turn over to Mr. E. C. Wilson, there present, certain evidence which would prevent and preclude [640] the Union Tool Company, the defendant herein, and its *present*, Edward Double, and their associates, and parties jointly interested with them, from winning any suit at present pending between those last-mentioned parties and in-

(Deposition of Thomas J. Griffin.)

terests, and Elihu C. Wilson, the complainant herein, and the Wilson & Willard Manufacturing Company and their allied interests?

Mr. LYON.—The same objections as last noted on the record.

A. In reply to that I wish to refer you to my answer before the present one and say that I stand upon my rights, and if the Court orders me to answer these questions along this line, I shall do so; but I shall answer no further questions unless ordered by the Court.

XQ. 448. (By Mr. BLAKESLEE.) Then as to both this question and the earlier one you have referred to, are we to understand you to refuse at this time to answer those questions?

Mr. LYON.—The same objection at last noted on the record.

A. I do, without instructions from the Court, with the greatest respect for this Court. They do not pertain to this case.

XQ. 449. (By Mr. BLAKESLEE.) And you so answer without any instructions from counsel for defendant here present?

Mr. LYON.—The same objection.

A. I do. I believe the questions are *impert* for
I.B. dis

the purpose of ~~its~~/crediting my testimony in this case, and, further, to intimidate me, and therefore I stand pat until the Court, with all due respect to said Court, orders me to answer.

XQ. 450. (By Mr. BLAKESLEE.) Did you not at that same conference and at the same time

(Deposition of Thomas J. Griffin.)

and place and in the presence of the same parties further state that you were sick and tired of the Double and Union Tool Company bunch, using an oath in describing them, and wanted to get away from them? [641]

Mr. LYON.—The same objections heretofore noted on the record.

XQ. 451. (By Mr. BLAKESLEE.) (Continuing.)—And get what you could out of E. C. Wilson, the complainant herein, for what evidence, information and patent rights you could bring to said E. C. Wilson? A. The same answer.

XQ. 452. Do I understand that you likewise refuse at this time and place to answer that question?

Mr. LYON.—The same objection.

A. The same answer.

XQ. 453. (By Mr. BLAKESLEE.) Did you not at that same interview, at the same time and place, and in the presence of the same parties state that you could produce for said E. C. Wilson evidence which would prove that the said R. E. Bole, patentee of Defendant's Exhibit Bole Patent, perjured himself in giving his testimony in said interference No. 37,126, and in his testimony before this same Court in the suit now on appeal, pending between said R. E. Bole and said Edward Double on the one hand, and said E. C. Wilson and the Wilson & Willard Manufacturing Company, defendants, in that a certain exhibit in evidence in both those cases, being a certain tracing purporting to show a key with

(Deposition of Thomas J. Griffin.)

alleged witnesses' signatures thereon, and further matter, was not a genuine document, but that the alleged signature thereon of one Fahnestock and one Grigsby were, in fact, forged upon said tracing—were, in fact, traced upon such tracing linen and not traced thereupon by said parties?

Mr. LYON.—The same objection as last noted on the record. It is apparent that counsel is simply endeavoring to pad this record and to cause costs and expense to the defendant company. The last inquiry clearly is not germane in any manner to the issues of this case, and the witness is instructed that he need not answer this question or any other question involving the [642] said interview until the Court has ruled thereon, in view of his refusal to answer fully in regard to such interview; and the notary is now instructed by the defendant not to take or transcribe any further question or questions with relation to such alleged interview until the Court has passed upon the refusal of the witness to answer fully in regard thereto, and if counsel for complainant insists upon any right to such cross-examination, he shall take the matter to the Court for ruling thereon. It must be apparent that if any of the matter is material or proper cross-examination, a ruling of the Court will be required before the witness will answer.

Mr. BLAKESLEE.—The only answer we deem proper or necessary to make to the foregoing argumentative statement of counsel for defendant is that

(Deposition of Thomas J. Griffin.)

as to this particular question it concerns evidence introduced by the defendant herein, namely, Defendant's Exhibit Bole Patent, under which defendant's counsel has stated upon the record it is his intention to show that the defendant herein is operating. Further than that, the observation is similarly made that, of course, the notary and reporter will transcribe and return the further cross-examination of this witness as well as any other part thereof, it being for the Court to rule upon any objections urged by the defendant when the case comes before the Court for final hearing under the rules, and to any specific question as to which such objections may be urged.

Mr. LYON.—Mr. Benjamin, you will take notice that the last statement of counsel for complainant if taken down by you in this record will be taken down by you and will be transcribed by you at the expense of someone else than the defendant Double, and you are informed that the defendant company will not pay for any further questions asked in regard to such interview until the ruling of the Court thereon. You will govern yourself accordingly.

[643]

A. Under advice of counsel and as previously stated, I refuse to answer the question.

XQ. 454. (By Mr. BLAKESLEE.) Are you not drawing royalties from a party or company, or parties or companies, at present in litigation with the complainant Elihu C. Wilson, or his company, the Wilson & Willard Manufacturing Company?

(Deposition of Thomas J. Griffin.)

A. I have many times previously testified that that is true; that I am drawing royalties from the Oil Well Supply Company and the Union Tool Company.

XQ. 455. And concerning matters which are involved in litigation between the complainant herein and those parties?

A. I have so stated in my previous answer.

XQ. 456. One such instance being royalties from the rotary drilling apparatus?

A. I so stated, that was.

XQ. 457. Now, as a matter of fact, did you not design or were you not responsible for the design of Complainant's Exhibit Type "F" Reamer in evidence in this case?

A. I have previously testified fully on that matter, and refer you to such answer as I have no further answer to make on it.

XQ. 458. Is it not a fact that you so stated at the conference on June 18 as to which I have previously questioned you, at the same time and at the same place and in the presence of the same parties?

Mr. LYON.—Objected to as not cross-examination, incompetent and not the proper method of proof, and indefinite, ambiguous and unintelligible.

A. I fully testified on this matter, and refer you to my previous answer. There is nothing to elaborate thereon.

XQ. 459. (By Mr. BLAKESLEE.) Did you not at that conference and at that time and place and in

(Deposition of Thomas J. Griffin.)

the presence of those [644] parties say that you invented that type F reamer?

Mr. LYON.—The same objection.

A. The same answer.

XQ. 460. (By Mr. BLAKESLEE.) At that same conference and at that same time and place and in the presence of the same parties did you not state that it was your belief that Dick Smith, the foreman of the Union Tool Company, invented the Double underreamer known as the “Double improved underreamer,” being substantially Complainant’s Exhibit Double Improved Underreamer and Cutters?

Mr. LYON.—Objected to on the same ground; and if it is for the purpose of impeachment, it is on an immaterial matter. The question of the validity of Defendant’s Exhibit Double Patent No. 2 is not an issue in this case.

A. The same answer as my previous answers.

XQ. 461. (By Mr. BLAKESLEE.) Do I understand you to refuse to answer that question here and now?

A. Until the Court has so decided.

XQ. 462. Did you not at that same conference, and at the same time and place and in the presence of the same parties, say that, to the best of your knowledge, Edward Double, the president of the Union Tool Company, the defendant herein, and the alleged inventor of Defendant’s Exhibits Double Patents Nos. 1, 2 and 3, had never invented anything.

(Deposition of Thomas J. Griffin.)

Mr. LYON.—The same objection as noted to the preceding questions.

A. The same answer that I have previously made.

XQ. 463. (By Mr. BLAKESLEE.) Do I understand you to refuse to answer this question at this time and place?

Mr. LYON.—The same objection.

A. Until the Court so orders.

XQ. 464. (By Mr. BLAKESLEE.) Was any person or were any [645] persons other than yourself responsible for your seeking that interview and conference of June 18, 1915, as to which I have previously questioned you?

Mr. LYON.—Objected to as not cross-examination, irrelevant and immaterial.

A. The same answer as to the previous question.

XQ. 465. (By Mr. BLAKESLEE.) Do I understand you to refuse to answer this last question in this time and place?

Mr. LYON.—The same objection last noted on the record.

A. The same answer, and it will be further understood that all questions pertaining to these interviews or alleged interview will be answered the same way as my previous questions, with all due respect to the Court, and I ask that, without my having to restate my position in the matter, that the reporter add it to each and every question.

XQ. 466. (By Mr. BLAKESLEE.) At that same conference and at the same time and place in

(Deposition of Thomas J. Griffin.)

the presence of the same parties, did you not offer to furnish proof as part of your offer, in consideration of the said sum of \$10,000, which you requested said E. C. Wilson to pay you, that with respect to the matter of this Defendant's Exhibit Bole Patent testimony given by the witness Heber and testimony given by the witness Adams was false, in that the said Robert E. Bole made sketches of the key involved in the controversy concerning said Bole patent for both said Heber and said Adams immediately before they testified in said Interference No. 37,126, and that said sketches were so made for said Heber and Adams by said Bole in the presence of defendant's counsel in this case and in your own presence?

Mr. LYON.—Objected to as not cross-examination, irrelevant and immaterial to the issues of this case, and if for the purpose of impeachment upon an immaterial matter.

(No answer.) [646]

XQ. 467. (By Mr. BLAKESLEE.) Do I understand you to refuse to answer this question here and now?

Mr. LYON.—The same objection.

A. The same answer.

XQ. 468. (By Mr. BLAKESLEE.) As a matter of fact, in that conference and as an object in seeking that conference or interview, and in framing up certain of your statements there made, were you not seeking to determine on behalf of the defendant in

(Deposition of Thomas J. Griffin.)

this case and the said Edward Double, its president, and those associated with them in this other litigation, how strong the complainants herein felt in the present case and other litigation between him and his interests and the said Double interests to be?

Mr. LYON.—The said objection as noted last on the record.

A. The same answer.

XQ. 469. (By Mr. BLAKESLEE.) Do you refuse to answer this question?

Mr. LYON. The same objection.

A. The same answer.

XQ. 470. (By Mr. BLAKESLEE.) Didn't Mr. Edward Double or Mr. Frederick S. Lyon, counsel for defendant in this case, suggest your soliciting that interview or conference?

Mr. LYON. The same objection.

A. The same answer.

XQ. 471. (By Mr. BLAKESLEE.) Do you refuse to answer this question here and now?

A. The same answer.

Mr. BLAKESLEE.—We shall insist that the present witness be present upon the final hearing of this case, then and there to answer such of the questions put to him in cross-examination as he has here and now refused to answer, and we further call upon and demand the witness to read over and sign his deposition before the same is certified and filed, under the stipulation. [647]

Mr. LYON.—I understand that the cross-examina-

(Deposition of Thomas J. Griffin.)

tion of the witness is closed?

Mr. BLAKESLEE.—It is completed.

Mr. LYON.—If counsel wishes to secure the ruling of the Court upon the refusal of this witness to answer any question or questions in this deposition, he will proceed in accordance with the rules, and timely. The defendant will not be responsible for the production of this witness at the final hearing as counsel for complainant has an immediate remedy.

Mr. BLAKESLEE.—The only time under the rules that these matters can be passed upon without motion, which is not required by the rules, is at the final hearing of this case.

Mr. LYON.—Counsel may rely on that assumption of the law if he desires, but he will take heed of the notice given to him.

The foregoing constitutes all of the proceedings covered by the notice under which the proceedings were had. [648]

In the United States District Court, Southern District of California, Southern Division.

IN EQUITY—No. A-4—CONSOLIDATED WITH
B-62.

E. C. WILSON,

Complainant,

vs.

UNION TOOL COMPANY,

Defendant,

(Deposition of Thomas J. Griffin.)

Pursuant to stipulation entered into by counsel for the respective parties hereto, without notice, notice having been expressly waived by counsel, and at Bakersfield, California, on Saturday, August 14, 1915, at the hour of 9 o'clock A. M., of said day, personally appeared Frederick W. Jones and Mrs. Jones, and also Frederick S. Lyon, Esq., solicitor for defendant, and Raymond Ives Blakeslee, Esq., solicitor for complainant, and the following proceedings were had:

Deposition of Frederick W. Jones, for Defendant.

FREDERICK W. JONES, being first duly sworn according to law, testified on behalf of defendant as follows:

Direct Examination.

(By Mr. LYON.)

Q. 1. Your name is Fred Jones?

A. Frederick W. Jones.

Q. 2. Where do you reside at the present time?

A. MacFarland.

Q. 3. That is in Kern County, California?

A. Yes, sir.

Q. 4. What is your present occupation?

A. Farmer.

Q. 5. Did you ever at any time reside in Santa Paula, Ventura County, California? [649]

A. Yes, sir.

Q. 6. While there, in what occupation were you engaged? A. Machinist.

Q. 7. How long did you work as a machinist?

(Deposition of Frederick W. Jones.)

A. In my whole life, I worked about thirty-one years.

Q. 8. How old are you at the present time?

A. Fifty-three.

Q. 9. During what years did you live at Santa Paula, California?

A. I came to Santa Paula in 1891.

Q. 10. And when did you leave there?

A. Now, you will have to ask my wife. What year was it we left there?

Mrs. JONES.—1897.

The WITNESS.—1907?

Mrs. JONES.—1907; yes.

Q. 11. (By Mr. LYON.) When you said 1891 did you mean 1891 or 1901? A. 1891.

Q. 12. Were you at any time connected in any manner at Santa Paula with the Union Oil Tool Company at Santa Paula?

A. Yes; I was there when the Union Oil Tool Company was first organized.

Q. 13. Were you employed by that company?

A. Yes, sir.

Q. 14. During what year or years?

A. Well, I sure couldn't tell just when that Union Oil Tool Company was organized. There may be some of you that can assist me in that date. I don't recall the exact date.

Q. 15. Did you go into the shop of that company when it was first organized? A. Yes, sir. [650]

Q. 16. How long did you remain with them?

A. I remained there till 1901.

(Deposition of Frederick W. Jones.)

Q. 17. What time in 1901, approximately?

A. I don't exactly remember the month, but I think it was along in June or July. I am not quite sure.

Q. 18. And after leaving the Union Oil Tool Company in June or July, 1901, what did you do?

A. I went into business for myself.

Q. 19. In what business?

A. In the machine business—making well tools.

Q. 20. Were you in any manner connected with any other person in that business?

A. Yes; a man by the name of Skinner.

Q. 21. What were his initials or his name?

A. George L. Skinner, I think. I forget. Yes, George L. Skinner.

Q. 22. How long did you continue in business with George L. Skinner at Santa Paula in the well tool business, approximately?

A. About November, 1902.

Q. 23. What shop did you and Skinner occupy in Santa Paula during that time?

A. You mean the name of the concern or the building?

Q. 24. Either one.

A. The name of the concern was the Santa Paula Tool Works.

Q. 25. And did you occupy the same shop during all that time? A. Yes, sir.

Q. 26. Did you at any time occupy the shop that had been occupied at Santa Paula by the Union Oil Tool Company?

(Deposition of Frederick W. Jones.)

A. After they had moved away?

Q. 27. After they had moved away. [651]

A. No; not in that firm.

Q. 28. You did subsequently—

A. I worked there for what they call the California Tool Company.

Q. 29. You say that after you went into business with Mr. Skinner in June or July, 1901, in Santa Paula, under the name of the Santa Paula Tool Works, you manufactured and sold well tools. What kind of tools?

A. Well, it was principally underreamers and sand pumps and fishing tools, and things like that.

Q. 30. What kind of underreamers?

A. We have made this one laying right here on the floor.

Q. 31. And when did you first make one like this one that you say is lying here on the floor in front of you?

A. You have reference to the making of it or the invention of it?

Q. 32. The making of the first one of them.

A. That was made in the—I think if I remember right it was made along in August or September or somewhere along there, in the year that I went in there.

Q. 33. That would be 1901? A. Yes, sir.

Q. 34. How many such reamers did you make, approximately, while you were in business with George L. Skinner at Santa Paula—like this one?

A. I don't remember; I couldn't say. We made several.

(Deposition of Frederick W. Jones.)

Q. 35. What became of them?

A. Well, they are scattered around; most of them, I think, went to Los Angeles.

Q. 36. When you say most of them went to Los Angeles, to whom did they go, if you remember, in a general way? [652]

A. There was one went to the Westlake Oil Company, and I think R. H. Herron took three or four.

Q. 37. R. H. Herron Company of Los Angeles, California, do you mean? A. Yes, sir.

Q. 38. At that time they were engaged in the business of selling oil well tools and machinery?

A. Yes, sir.

Q. 39. Do you know what they did with any such reamers? A. They rented them out.

Q. 40. Do you know what became of the reamer like the one you have identified here and which was sent by you to the Westlake Oil Company?

A. No; I do not. I couldn't say.

Q. 41. Under what conditions did you send such reamer to the Westlake Oil Company?

A. Well, I don't know that there was any conditions. That is, I can't recall them just now. They just simply bought the reamer and used it.

Q. 42. You sold the reamer to them?

A. Yes, sir.

Q. 43. Did they pay for it? A. Yes, sir.

Q. 44. Did you ever have any complaints as to the success or failure of the reamer in any manner?

A. Not that I can recall at the present time.

Q. 45. Do you remember the name of any of the

(Deposition of Frederick W. Jones.)

men in charge of such Westlake Oil Company at that time?

A. I believe that the man's name that had charge of the lease—I think his name was Jones, and, if I remember right, the initials were the same as mine.

Q. 46. But not yourself. [653]

A. It was not myself.

Q. 47. Do you remember any of the drillers' names, or any of the operative's names?

A. One man's name I remember very well was Fred Fish.

Q. 48. (By Mr. BLAKESLEE.) Is that Stuttering Fred? A. Yes, sir.

Mr. LYON.—Defendant asks that the reamer just referred to by the witness be marked "Defendant's Exhibit Fred W. Jones Reamer Type 1" and offers the same in evidence.

The said reamer is marked "Defendant's Exhibit Fred W. Jones Reamer Type 1," together with the title of the court and cause and the date upon which the same was offered.

Q. 49. (By Mr. LYON.) Where did you have the forgings made for these reamers like "Defendant's Exhibit Fred W. Jones Reamer Type 1"?

A. We had some of the forgings made at the Baker Iron Works and some of them at the Well Tool Works, Los Angeles.

Q. 50. When you say "Baker Iron Works" you mean the Baker Iron Works of Los Angeles, California? A. Yes, sir.

Q. 51. Do you remember where the first one of

(Deposition of Frederick W. Jones.)

these forgings was made?

A. The first one was made at the Baker Iron Works.

Q. 52. Did you at any time make any other type or style of underreamer while you were in business with George L. Skinner? A. Yes, sir.

Q. 53. What kind of an underreamer was that?

A. That is it over there. (Witness points to another reamer in the room.)

Q. 54. When did you commence the manufacture of such reamer? [654]

A. I don't exactly remember the date, but it was sometime along in the fall of 1901. I don't exactly remember the date, but I know it was in the fall sometime of 1901.

Q. 55. When you say the fall, you mean approximately what month?

A. Well, September, October and November, or somewhere along there.

Q. 56. Did you make more than one of the reamers of this second type?

A. Yes; we made several.

Q. 57. What did you do with them?

A. We shipped several to Colorado, and there were three or four used in Ventura County, and some in Los Angeles. I don't know just how many.

Q. 58. When you say you shipped three or four to Colorado, under what circumstances did you ship them to Colorado?

A. We sold them to a man named Spencer at Florence.

(Deposition of Frederick W. Jones.)

Q. 59. About when was that?

A. I don't exactly remember dates, but it was along in the winter of 1901 and 1902.

Q. 60. Do you remember Mr. Spencer's initials?

A. No, sir; I do not.

Q. 61. You say several of this second type of reamer were used in Ventura County?

A. Yes, sir.

Q. 62. By whom and where?

A. Well, I can't remember all the people that used it, as we kept them there in the shop to rent out. But there were two used in Santa Barbara County by a man named Puffenberg.

Q. 63. On whose lease or property did Puffenberg use these two reamers?

A. It was known as the I. G. Waterman Estate in Montecito. [655]

Q. 64. For what purpose did Puffenberg have these two reamers of this second type at that time?

A. He used them for underreaming in a water well.

Q. 65. What size reamers were they?

A. $9\frac{7}{8}$ and $7\frac{5}{8}$ inch.

Q. 66. Which one of such reamers did Puffenberg first have? A. $9\frac{5}{8}$.

Q. 67. Do you remember the circumstances of how the order for such reamer came to you?

A. Yes; very well.

Q. 68. Please state.

A. We had a telephone call from Santa Barbara. It says, "Please ship by express to I. G. Waterman one $9\frac{5}{8}$ underreamer," and the reamer was shipped

(Deposition of Frederick W. Jones.)

that same day by express to Santa Barbara.

Q. 69. And how long, approximately, was such reamer retained?

A. I don't exactly remember the date, but I think it was about two or three weeks.

Q. 70. And then was it returned? A. Yes.

Q. 71. Who returned it?

A. Puffenberg and some other man. I don't remember his name. They brought it in a spring wagon.

Q. 72. And what was done then?

A. They *taken* the $7\frac{5}{8}$ back with them.

Q. 73. Why did they take the $7\frac{5}{8}$ back with them?

A. It seems they wanted to use it for underreaming a $7\frac{5}{8}$ -inch casing.

Q. 74. In other words, they reduced the size of their casing and required a smaller reamer? [656]

A. I think that was the reason.

Q. 75. That would be the usual reason for such a change? A. Yes.

Q. 76. At that time was there any complaint at all made by either Mr. Puffenberg or this other man as to the success or operativeness of this second type of Jones reamer?

A. Not to my knowledge.

Q. 77. They did not express any dissatisfaction with it at that time? A. No.

Q. 78. You say that you rented these second type reamers to different persons during that period of time. Were such rentals paid for the use of them?

A. Yes; most of them. This one that we are

(Deposition of Frederick W. Jones.)

speaking of was not paid.

Q. 79. Do you know the reason why?

A. Well, it seems in the evidence—I had to bring suit to collect my money, and the evidence in the suit proved that Puffenberg took the contract to drill the water well for I. G. Waterman, and was to furnish all the tools. But this order came through Waterman's foreman. Puffenberg done the telephoning under instructions of the foreman and it was shipped to I. G. Waterman, and it seems that the Court took it up with the idea that Puffenberg was to furnish all the tools.

Q. 80. You sued Waterman for the rental of the tools? A. Yes, sir.

Q. 81. And the Court held that Waterman had nothing to do with the rental or the furnishing of the tools for that well, is that it?

A. That was the impression that was brought to bear upon the judge, evidently. [657]

Q. 82. Was there any question raised or complaint made or anything said that either the $9\frac{5}{8}$ inch or the $7\frac{5}{8}$ inch underreamers of this second Jones style which was so sent to the Waterman place and used there, were or were not satisfactory in underreaming?

Mr. BLAKESLEE.—Objected to as incomplete, and, furthermore, that it is not the best evidence, and amounting merely to hearsay so far as establishing the operativeness or *inoperateness* of any such reamer.

(Deposition of Frederick W. Jones.)

A. To the best of my knowledge there was no complaint.

Q. 83. (By Mr. LYON.) Besides selling several of this second type reamer to Spencer and shipping them to Florence, Colorado, did you sell any of these second type reamers to any other persons or corporations?

A. I can't remember. We did, but I can't remember just who it was now. It has been a long time ago.

Q. 84. You have referred to the R. H. Herron Company of Los Angeles, California. Did you sell them any of such second type Jones reamers?

A. I think we did, but I am not positive.

Q. 85. Approximately, how many of this second type Jones reamers did you manufacture while you were in business with Mr. Skinner?

A. Well, that I don't know.

Q. 86. What would be your best recollection?

A. I should judge there must have been probably 10 or a dozen.

Q. 87. Are you acquainted with Mr. Close who was formerly connected with the Los Angeles Tool Works at Los Angeles, California?

A. Yes, sir, I met the man several years ago.

Q. 88. In what connection did you meet him first? [658]

A. That I don't remember.

Q. 89. Did he have any business dealings at all with you in connection with underreamers like either of these two types you have referred to here?

(Deposition of Frederick W. Jones.)

Mr. BLAKESLEE.—We object to the question as leading and not the proper method of proof.

A. We had some forgings made there at the shop where Mr. Close was foreman, and I am not sure but what we had a reamer made there.

Mr. LYON.—The second underreamer referred to by the witness and heretofore referred to in questions and answers as the Jones and second Type reamer, being the second underreamer identified by the witness we ask to be now marked as “Defendant’s Exhibit Fred W. Jones Reamer Type 2,” and offer it in evidence.

The said reamer so offered in evidence is marked “Defendant’s Exhibit Fred W. Jones Reamer Type 2,” together with the title of the court and cause and the date upon which the said reamer was offered in evidence.

Q. 90. (By Mr. LYON.) Please examine this. Defendant’s Exhibits Fred W. Jones Reamers Types 1 and 2, and state whether or not any changes have been made in either of the same since they were manufactured by or for you in 1901 or ’2.

Mr. BLAKESLEE.—Objected to as assuming facts contrary to the testimony of the witness and not borne out thereby, namely, that the reamers themselves were made by or for the witness. That is, these specific reamers in evidence.

A. I couldn’t swear that these reamers—whether this was made by me or made by the Well Tool Works, but this (type 1) I know I made myself.

Mr. BLAKESLEE.—And let it be shown that the

(Deposition of Frederick W. Jones.)

witness referred to the Type 2 exhibit in the first part of his remarks.

Mr. LYON.—Now read the question to the witness.
[659]

(The examiner reads the question to the witness.)

A. None that I can discover.

Q. 91. When you went down first to the Los Angeles Well Tool Works at Los Angeles to have the first bodies forged or the first underreamer like Type 2 made, what means, if any, did you have with you or make, to show to the officers or workmen of the Los Angeles Tool Works what it was that you wanted?

Mr. BLAKESLEE.—Objected to as assuming that the forgings for the Type 2 exhibit were made at the Los Angeles Tool Works.

A. I had a complete detail drawing—a blue-print.

Q. 92. Do you remember any person to whom you showed such blue-print at Los Angeles at that time or about that time?

A. No; I cannot remember that I showed it to anyone other than the foreman of the shop there.

Q. 93. And who was that?

A. I think that was Mr. Mills.

Q. 94. Did you see Mr. Close there at that time?

A. I don't remember. It seems to me that Mr. Close had left there at that time, if I remember right, but I may be wrong.

Q. 95. In other words, it may have been Mr. Close or Mr. Mills to whom you took that print?

A. Yes.

(Deposition of Frederick W. Jones.)

Q. 96. Did you take that drawing to any other machine shop or any other manufacturing establishment in Los Angeles at that time?

A. Not at that time, I don't think, but afterwards I left the drawing with R. H. Herron.

Q. 97. You appeared here in answer to a subpoena served upon you, didn't you?

A. I beg pardon.

Q. 98. Just read the question.

(Question read.) [660]

A. Yes, sir.

Q. 99. How long have you known Elihu C. Wilson, complainant in this case, who is here present in the room?

A. I cannot state positively, but *is* was while Mr. Wilson was employed at the Baker Iron Works.

Q. 100. Was that while you were having bodies made for the defendant's Exhibit Fred W. Jones Reamer Type 1?

Mr. BLAKESLEE.—Objected to as leading.

A. *In* think that was the time.

Q. 101. (By Mr. LYON.) Do you know what Mr. Wilson's position was there at that time?

A. I do not, but I know that he was in the office.

Q. 102. Did you have any conversation with him at the Baker Iron Works at that time, to wit, while you were having the bodies made at the Baker Iron Works for Defendant's Exhibit Fred W. Jones Reamer Type 1 style of Jones reamer?

A. I don't think I did.

Q. 103. Have you ever had any conversation with

(Deposition of Frederick W. Jones.)

Mr. E. C. Wilson about either of these two types of Jones reamers, Defendant's Exhibit Fred W. Jones Type 1 and Defendant's Exhibit Fred W. Jones Type 2?

A. I don't remember ever having any conversation with him in regard to No. 2 until to-day.

Q. 104. Then you have talked with Mr. E. C. Wilson before going on the stand to testify here to-day?

A. Yes.

Q. 105. Are we then to understand that prior to to-day you talked with Mr. Wilson in regard to the type Jones reamer like Defendant's Exhibit Jones Reamer Type 1? A. No, sir.

Q. 106. Mr. Wilson was up to see you two or three weeks ago at your ranch near McFarland, California? A. Yes, sir. [661]

Q. 107. Did you discuss any of these old underreamers with him at that time? A. No, sir.

Mr. BLAKESLEE.—Objected to as indefinite.

Q. 108. (By Mr. LYON.) What conversation did you have with him at that time?

A. Well, we talked about the original reamer that we made at Santa Paula in the Union Tool Company's shop. That is the principal thing we talked about.

Q. 109. Please give us the whole of that conversation and its words, as near as you can remember.

A. Well, *we* asked me if I knew anything of the reamer and I told him that I did, and he wanted to know who got it up, and I told him that I had done my part in it as much or more than anybody, and he

(Deposition of Frederick W. Jones.)

asked me if I didn't think I was entitled to an interest in that patent, and I told him that I thought I was, and he wanted to know why I had not pressed the case, and I told him that I did not have the money to buck a concern like the Union Tool Company and I thought it was best to let it alone. That was about the essence of the conversation.

Q. 110. Did he say anything about bringing such suit at the present time? A. I beg pardon?

Q. 111. Read the question.

(Question is read by the examiner.)

A. No.

Q. 112. Was it before or after the building of this first reamer at the shop of the Union Oil Tool Company to which you have referred that you first conceived the idea of making an underreamer like either Defendant's Exhibit Fred W. Jones Reamer Type 1 or Defendant's Exhibit Fred W. Jones Reamer Type 2?

Mr. BLAKESLEE.—Objected to as indefinite.
[662]

A. This exhibit No. 1, I got up about the same time. I couldn't say which was first nor which was last, because they were so near the same time and it is so long ago that I can't possibly tell.

Q. 113. (By Mr. LYON.) Now, answer in regard to the second.

A. This Type 2 I got up after I left the Union Oil Tool Company.

Mr. BLAKESLEE.—Let it be shown that the witness referred to Reamer Type 1 in the first part of his answer.

(Deposition of Frederick W. Jones.)

Q. 114. (By Mr. LYON.) Why was it, Mr. Jones, that you discontinued the manufacture and sale or rental of underreamers like Defendant's Exhibit Fred W. Jones Reamers Types 1 and 2?

A. I think the principal reason was that there wasn't any sale for them.

Q. 115. And why was there no sale for them found?

Mr. BLAKESLEE.—Objected to as calling for a conclusion on the part of the witness and not for a statement of fact.

A. I suppose the reason was they had to come into competition with other reamers which could be sold cheaper.

Q. 116. (By Mr. LYON.) Among which as the reamer manufactured by the Union Oil Tool Company at that time?

A. Yes, and others that were on the market besides that.

Q. 117. Did you at any time file an application for letters patent of the United States upon either of these types of Jones reamer like Defendant's Exhibit Fred W. Jones reamer Type 1 or Defendant's Exhibit Fred W. Jones Reamer Type 2?

A. On Type 2 the application was filed.

Q. 118. Can you give the date upon which such application was filed and the serial number of such application?

A. July 14, 1902, Serial number 115,608.

Q. 119. Was a patent ever issued to you on that application? A. No. [663]

(Deposition of Frederick W. Jones.)

Q. 120. Do you know the reason?

Mr. BLAKESLEE.—Objected to as calling for a conclusion on the part of the witness.

Mr. LYON.—In view of the objection of counsel and to secure the best evidence, notice is hereby given that an application will be made to the judge of this court for an order certifying that such application is required as evidence in this case, and application will be made to the Commissioner of Patents for a certified copy of the file wrapper and contents of such application, and the same will be offered in evidence as soon as the same can be procured from the patent office, or at the final hearing of this cause if not procurable before.

Mr. BLAKESLEE.—We have no objection to the offer of such certified copy of such Jones application in evidence if the same be properly certified by the present witness as being his application, and to that end we are willing that such certification be informally made by the witness (without the necessity of taking further testimony) in some manner which may be found convenient to counsel for both parties. In other words, if he is satisfied that it is his writing and will attach a letter of certification to it that it was his application, you can put it in.

Mr. LYON.—We won't have any bother about that.

Mr. BLAKESLEE.—All right.

Mr. LYON.—It would save considerable time, Mr. Jones, if you would give us a note to the Commissioner of Patents authorizing him, at our expense, furnish him with a certified copy of such application.

(Deposition of Frederick W. Jones.)

Are you willing so to do?

A. If you will make out the application, I will sign it.

MR. LYON.—That will avoid the bother of going into court.

MR. BLAKESLEE.—That is all right. If you wish, I will stipulate that that certified copy of the file wrapper and contents [664] or the application, or whatever there is there, may be offered in evidence as certified copy of file wrapper and contents of Jones 1902 application, when certified by the witness. Then you don't have to bother with anything further.

Q. 121. (By Mr. LYON.) Can you produce any record or document of any kind showing when it was that any of these reamers like Defendant's Exhibit Fred W. Jones Reamer Types 1 or 2 were either made or sold or rented? If so, please do so.

MR. BLAKESLEE.—Objected to as calling for a conclusion and as leading and not the proper method of proof.

A. I produce a copy of a letter dated March 12, 1903, dated Santa Paula, California, to which I call your attention.

Q. 122. (By Mr. LYON.) Mr. Jones, you have called my attention to this purported copy of a letter. Do you know when this letter was written?

A. The letter is dated, isn't it?

Q. 123. Yes. And was the letter mailed on that date to Mr. Smiley Ovieda?

(Deposition of Frederick W. Jones.)

A. To the best of my knowledge it was.

Q. 124. By whom was this letter written?

A. By my wife.

Q. 125. On your behalf? A. Yes, sir.

Q. 126. And under your instructions?

A. Yes, sir.

Q. 127. Did you see it at the time?

Q. 128. *Did you see it at the time?*

A. Yes, sir.

Mr. LYON.—The letter referred to is offered in evidence, and, by consent of counsel, it is copied into the record with the same force and effect as the copy produced by the witness, the same being as follows:
[665]

“Santa Paula, Calif. Mar. 12-3.

“Mr. Smiley Ovieda,

Dear Sir: Please find inclose bill for the use of 9-5/8 & 7-5/8 Reamer. I have been sending this bill to Waterman and he has paid no attention to it whatever.

Now, you would do me a great favor if you would please settle this bill right away. As I am in need of the money.

Yours Resp't,

FRED W. JONES.”

Q. 129. In this same copy book I find a letter dated June 5, 1903, to William J. Griffith. Who was William J. Griffith? A. He was an attorney.

Q. 130. At Santa Barbara, California?

A. Yes, sir.

Q. 131. And on the preceding page a bill to Mr.

(Deposition of Frederick W. Jones.)

I. G. Waterman. What was that bill?

A. That was a bill for the rent of the underreamers.

Q. 132. Were these made out at the time, to wit, June 5, 1903, and mailed at that time under your instructions? A. Yes, sir.

Mr. LYON.—The letter referred to and the accompanying bill are now copied on this record with the same force and effect as exhibits, as though the originals were offered and produced, the same being as follows:

Mr. BLAKESLEE.—Did you write these two?

Mr. JONES.—Yes.

Mr. LYON.—(Reading:)

“Santa Paula, Calif., June 5, 1903.

Mr. Wm. J. Griffith,

Dear Sir: Your name was given to me by D. E. Clark.

Please find inclosed a bill inclosed on I. G. Waterman [666] for \$765.50/100.

He had flatly refused to pay this bill. Mr. Smiley, his foreman, was the man that ordered the tools and J. A. Puffingberg or Summerland was the man that used them. Mr. Puffingberg will give you all the Proofs and information and witnesses necessary?

Please go ahead and collect this bill as soon as possible.

Yours Resp't,

F. W. JONES.

P. S.—I have notified Waterman all cost would be added to this bill.”

Mr. LYON.—The bill is as follows: (Reading:)

(Deposition of Frederick W. Jones.)

“Mr. I. G. Waterman in account with F. W. Jones.

Use of 9-5/8 Under-Reamer 65.

Use of 7-5/8 Under-Reamer from Dec. 1st
to June 1st..... 318.50

The cost of trip to S. B. April 17 to collect
bill, and time lost while going 11.25

For 7-5/8 Under-Reamer not returned.....300.

To 5 added for collecting 70.

764.75”

Q. 133. (By Mr. LYON.) This letter to Mr. Waterman just referred to and this bill were also made out for you by your wife under your directions, were they?

A. Yes, sir.

Mr. LYON.—You may cross-examine.

Cross-examination.

(By Mr. BLAKESLEE.)

XQ. 134. Were you at any time employed by the Union Oil Company? A. Yes, sir

XQ. 135. What period of time was that? [667]

A. I don't exactly remember the date, but when I went to work for that company first the Santa Paula Hardware were the people that owned the shop, and I think it was about two years after I started to work for them that the Union Oil Company took over the shop from the hardware department, and then it continued under the management of the Union Oil Company until the Oil—and then they organized the Union Oil Tool Company and then this Union Oil Tool Company took over the shop

(Deposition of Frederick W. Jones.)

part of it. When I went to work for them there was no Union Oil Company in existence.

XQ. 136. That is away back in 1891?

A. 1891. There was no Union Oil Company then at all.

XQ. 137. What was the concern that ran the shop called then? A. At what date?

XQ. 138. 1891.

A. The Santa Paula Hardware. That was controlled by the Hardison & Stewart outfit.

XQ. 139. That is, the Stewart that is at the head of the Union Oil Company now? A. Yes, sir.

XQ. 140. And you have three or four sons who were employed by that company at one time? That is, the Union Oil Company? A. Yes, sir.

XQ. 141. Are any of them employed by that company now? A. No, sir.

XQ. 142. When did they leave its employment—the last one? A. I couldn't say.

XQ. 143. Was it within the last year?

A. It has been longer than that.

XQ. 144. You were connected with this shop at Santa Paula which afterwards became the shop of the Union Oil Tool [668] Company when Edward Double, now the president of the Union Tool Company first came to that shop, were you not?

A. Yes, sir; he came from the east and took my job.

XQ. 145. And what was your job that he took?

A. Foreman of the shop.

XQ. 146. And what was your job after he took

(Deposition of Frederick W. Jones.)

your job of foreman which you had previously held?

A. I went back to run a lathe for him.

XQ. 147. And was that before any underreamers were made at that shop?

A. Yes, sir—well, I will say that we made the old Austrian type of underreamers there before that.

XQ. 148. And before any underreamers were made at that shop aside from the Austrian underreamers did you have any underreamers known as the Swan underreamers at that shop?

Mr. LYON.—Objected to as not cross-examination.

Mr. BLAKESLEE.—The record shows that counsel for defendant has gone into the question of the conversation of this witness with the complainant as to matters of these early reamers, and we contend that it is proper cross-examination to further explore that ground.

A. Yes, sir; we had most all kinds of reamers that were on the market at that date to repair.

XQ. 149. Did you have there at that time, namely, before any underreamers were made there other than the Austrian, any catalogues of underreamers and oil well supplies of any kind?

A. Yes, sir.

XQ. 150. What catalogues?

A. We had the Oil Well Supply Catalogue.

XQ. 151. That is, the Oil Well Supply Company Catalogue? A. Yes, sir.

XQ. 152. Of Pittsburg, Pennsylvania. [669]

A. Yes, sir; and we also had the catalogue of Bovard & Seyfang.

(Deposition of Frederick W. Jones.)

XQ. 153. What kind of underreamers were shown in these catalogues?

A. I think the only reamers shown in those catalogues were the Austrian underreamer and the Canadian underreamer.

XQ. 154. Do you remember what the Canadian underreamer was like?

Mr. LYON.—Objected to as not cross-examination.

Mr. BLAKESLEE.—The witness furthermore is testifying to his invention of certain reamers and we are attempting to test his memory as to these inventions and also to show the antecedents of these inventions, and, furthermore, counsel has gone into the question of these earlier reamers on the direct examination of the witness.

Mr. LYON.—The question is further objected to on the ground that it calls for secondary evidence, incompetent and not the best evidence, and no foundation laid for the introduction of secondary evidence. The witness has not testified that he ever saw a Canadian underreamer, so-called.

A. To the best of my knowledge it was constructed with a pin and spring in the center of the body, with two cutters extending down on each side, and the cutters were extended below the point of the main body, considerable.

XQ. 155. (By Mr. BLAKESLEE.) And did those cutters expand and collapse? A. Yes, sir.

XQ. 156. What caused them to expand and collapse?

A. By raising on steps and being pulled down to

(Deposition of Frederick W. Jones.)

hook over the point of the step, on the point of the body.

XQ. 157. Was there anything like a wedge between them that caused them to expand and collapse?
[670]

Mr. LYON.—The same objection will be understood as repeated to all this line of questioning, without the necessity of hereafter repeating the same upon the record. A. I don't remember.

XQ. 158. (By Mr. BLAKESLEE.) Wasn't it part of the body that the cutters expanded and collapsed over at the bottom? A. I think it was.

XQ. 159. And that was shown in the Oil Well Supply Company Catalogue that you speak of?

Mr. LYON.—The same objection.

A. Yes, sir.

XQ. 160. How early was it that you saw that catalogue at the shop in Santa Paula?

A. Along in 1896 or '7.

XQ. 161. Did you ever see one of those Canadian underreamers? A. I never did that I know of.

